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## ! IMPORTANT SAFETY INSTRUCTIONS !

1. READ these instructions.
2. KEEP these instructions.
3. HEED all warnings.
4. FOLLOW all instructions.
5. DO NOT use this apparatus near water.
6. CLEAN ONLY with dry cloth.
7. DO NOT block any ventilation openings. Install in accordance with the manufacturer's instructions.
8. DO NOT install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.
9. DO NOT defeat the safety purpose of the polarized or grounding-type plug. A polarized plug has two blades with one wider than the other. A grounding type plug has two blades and a third grounding prong. The wider blade or the third prong are provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.
10. PROTECT the power cord from being walked on or pinched, particularly at plugs, convenience receptacles, and the point where they exit from the apparatus.
11. ONLY USE attachments/accessories specified by the manufacturer.
12.  USE only with a cart, stand, tripod, bracket, or table specified by the manufacturer, or sold with the apparatus. When a cart is used, use caution when moving the cart/apparatus combination to avoid injury from tip-over.
13. UNPLUG this apparatus during lightning storms or when unused for long periods of time.
14. REFER all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as power-supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.
15. DO NOT expose the apparatus to dripping and splashing. DO NOT put objects filled with liquids, such as vases, on the apparatus.
16. The MAINS plug or an appliance coupler shall remain readily operable.
17. The airborne noise of the apparatus does not exceed 70dB (A).
18. Apparatus with CLASS I construction shall be connected to a MAINS socket outlet with a protective earthing connection.
19. To reduce the risk of fire or electric shock, do not expose this apparatus to rain or moisture.
20. Do not attempt to modify this product. Doing so could result in personal injury and/or product failure.



This symbol indicates that dangerous voltage constituting a risk of electric shock is present within this unit.



This symbol indicates that there are important operating and maintenance instructions in the literature accompanying this unit.

**WARNING:** Voltages in this equipment are hazardous to life. No user-serviceable parts inside. Refer all servicing to qualified service personnel. The safety certifications do not apply when the operating voltage is changed from the factory setting.

**WARNING:** This product contains a chemical known to the State of California to cause cancer and birth defects or other reproductive harm.

## ! CONSIGNES DE SÉCURITÉ IMPORTANTES !

1. LIRE ces consignes.
2. CONSERVER ces consignes.
3. OBSERVER tous les avertissements.
4. SUIVRE toutes les consignes.
5. NE PAS utiliser cet appareil à proximité de l'eau.
6. NETTOYER UNIQUEMENT avec un chiffon sec.
7. NE PAS obstruer les ouvertures de ventilation. Installer en respectant les consignes du fabricant.
8. Ne pas installer à proximité d'une source de chaleur telle qu'un radiateur, une bouche de chaleur, un poêle ou d'autres appareils (dont les amplificateurs) produisant de la chaleur.
9. NE PAS détériorer la sécurité de la fiche polarisée ou de la fiche de terre. Une fiche polarisée comporte deux lames dont l'une est plus large que l'autre. Une fiche de terre comporte deux lames et une troisième broche de mise à la terre. La lame la plus large ou la troisième broche assure la sécurité de l'utilisateur. Si la fiche fournie ne s'adapte pas à la prise électrique, demander à un électricien de remplacer la prise hors normes.
10. PROTÉGER le cordon d'alimentation afin que personne ne marche dessus et que rien ne le pince, en particulier au niveau des fiches, des prises de courant et du point de sortie de l'appareil.
11. UTILISER UNIQUEMENT les accessoires spécifiés par le fabricant.
12.  UTILISER uniquement avec un chariot, un pied, un trépied, un support ou une table spécifié par le fabricant ou vendu avec l'appareil. Si un chariot est utilisé, déplacer l'ensemble chariot-appareil avec précaution afin de ne pas le renverser, ce qui pourrait entraîner des blessures.
13. DÉBRANCHER l'appareil pendant les orages ou quand il ne sera pas utilisé pendant longtemps.
14. CONFIER toute réparation à du personnel qualifié. Des réparations sont nécessaires si l'appareil est endommagé de quelque façon que ce soit, comme par exemple : cordon ou prise d'alimentation endommagé, liquide renversé ou objet tombé à l'intérieur de l'appareil, exposition de l'appareil à la pluie ou à l'humidité, appareil qui ne marche pas normalement ou que l'on a fait tomber.
15. NE PAS exposer cet appareil aux égouttements et aux éclaboussements. NE PAS poser des objets contenant de l'eau, comme des vases, sur l'appareil.
16. La prise SECTEUR ou un adaptateur d'alimentation doit toujours rester prêt(e) à être utilisé(e).
17. Le bruit aérien de l'appareil ne dépasse pas 70 dB (A).
18. L'appareil de construction de CLASSE I doit être raccordé à une prise SECTEUR dotée d'une protection par mise à la terre.
19. Pour réduire les risques d'incendie ou de choc électrique, ne pas exposer cet appareil à la pluie ou à l'humidité.
20. Ne pas essayer de modifier ce produit. Une telle opération est susceptible d'entraîner des blessures ou la défaillance du produit.



Ce symbole indique la présence d'une tension dangereuse dans l'appareil constituant un risque de choc électrique.



Ce symbole indique que la documentation fournie avec l'appareil contient des instructions d'utilisation et d'entretien importantes.

**AVERTISSEMENT :** Les tensions à l'intérieur de cet équipement peuvent être mortelles. Aucune pièce interne réparable par l'utilisateur. Confier toute réparation à du personnel qualifié. Les certifications de sécurité sont invalidées lorsque le réglage de tension d'usine est changé.

**! INSTRUCCIONES IMPORTANTES DE SEGURIDAD !**

1. LEA estas instrucciones.
2. CONSERVE estas instrucciones.
3. PRESTE ATENCIÓN a todas las advertencias.
4. SIGA todas las instrucciones.
5. NO utilice este aparato cerca del agua.
6. LIMPIESE UNICAMENTE con un trapo seco.
7. NO obstruya ninguna de las aberturas de ventilación. Instálese según lo indicado en las instrucciones del fabricante.
8. No instale el aparato cerca de fuentes de calor tales como radiadores, registros de calefacción, estufas u otros aparatos (incluyendo amplificadores) que produzcan calor.
9. NO anule la función de seguridad del enchufe polarizado o con clavija de puesta a tierra. Un enchufe polarizado tiene dos patas, una más ancha que la otra. Un enchufe con puesta a tierra tiene dos patas y una tercera clavija con puesta a tierra. La pata más ancha o la tercera clavija se proporciona para su seguridad. Si el tomacorriente no es del tipo apropiado para el enchufe, consulte a un electricista para que sustituya el tomacorriente de estilo anticuado.
10. PROTEJA el cable eléctrico para evitar que personas lo pisen o estrujen, particularmente en sus enchufes, en los tomacorrientes y en el punto en el cual sale del aparato.
11. UTILICE únicamente los accesorios especificados por el fabricante.
12.  UTILICESE únicamente con un carro, pedestal, trípode, esquadra o mesa del tipo especificado por el fabricante o vendido con el aparato. Si se usa un carro, el mismo debe moverse con sumo cuidado para evitar que se vuelque con el aparato.
13. DESENCHUFE el aparato durante las tormentas eléctricas, o si no va a ser utilizado por un lapso prolongado.
14. TODA reparación debe ser llevada a cabo por técnicos calificados. El aparato requiere reparación si ha sufrido cualquier tipo de daño, incluyendo los daños al cordón o enchufe eléctrico, si se derrama líquido sobre el aparato o si caen objetos en su interior, si ha sido expuesto a la lluvia o a la humedad, si no funciona de modo normal, o si se ha caído.
15. NO exponga este aparato a chorros o salpicaduras de líquidos. NO coloque objetos llenos con líquido, tales como floreros, sobre el aparato.
16. El enchufe de alimentación principal o acoplador de aparato electrodoméstico deberá permanecer en condiciones de funcionamiento.
17. El nivel de ruido transmitido por el aire del aparato no excede de 70 dB (A).
18. Los aparatos de fabricación CLASE I deberán conectarse a un tomacorriente DE ALIMENTACIÓN con clavija de puesta a tierra protectora.
19. Para reducir el riesgo de causar un incendio o sacudidas eléctricas, no exponga este aparato a la lluvia ni a humedad.
20. No intente modificar este producto. Hacerlo podría causar lesiones personales y/o la falla del producto.



Este símbolo indica que la unidad contiene niveles de voltaje peligrosos que representan un riesgo de choques eléctricos.



Este símbolo indica que la literatura que acompaña a esta unidad contiene instrucciones importantes de funcionamiento y mantenimiento.

**ADVERTENCIA :** Los voltajes presentes en este equipo representan un riesgo para la vida. No contiene componentes reparables por el usuario. Toda reparación debe ser llevada a cabo por técnicos calificados. Las certificaciones de seguridad no tienen vigencia cuando el voltaje de funcionamiento de la unidad es cambiado a un valor distinto al ajustado en fábrica.

**! IMPORTANTES INSTRUÇÕES DE SEGURANÇA !**

1. LEIA estas instruções.
2. GUARDE estas instruções.
3. PRESTE ATENÇÃO a todas as advertências.
4. SIGA todas as instruções.
5. NÃO use este aparelho perto de água.
6. LIMPE SOMENTE com um pano seco.
7. NÃO bloquee nenhuma das aberturas de ventilação. Instale de acordo com as instruções do fabricante.
8. NÃO instale próximo de nenhuma fonte de calor, tais como radiadores, bocais de aquecimento, fornos ou outros aparelhos que produzam calor (inclusive amplificadores).
9. NÃO inutilize as características de segurança do conector polarizado ou com pino de aterramento. Um conector polarizado possui duas lâminas com uma mais larga do que a outra. Um conector com pino de aterramento possui duas lâminas e um terceiro pino de aterramento. É fornecida uma lâmina mais larga ou o terceiro pino para a sua segurança. Se por acaso o conector não se encaixar na tomada, chame um eletricista para substituir a tomada obsoleta.
10. PROTEJA o cabo de alimentação, evitando que seja pisado ou que enrosque, especialmente nos conectores, nas tomadas elétricas de emprego geral e no ponto onde elas saem do aparelho.
11. USE SOMENTE acessórios/apetrechos especificados pelo fabricante
12.  USE somente com um carrinho, pedestal, tripé, suporte ou mesa especificados pelo fabricante ou vendidos com o aparelho. Quando utilizar um carrinho, tenha cuidado ao movimentar o conjunto aparelho/carrinho para evitar danos com a queda do mesmo.
13. DESLIGUE este aparelho da tomada elétrica durante tempestades com relâmpagos ou quando não seja utilizado por longo período.
14. DEIXE toda a manutenção sob a responsabilidade de uma equipe de manutenção qualificada. É necessário realizar a manutenção quando por algum motivo o aparelho tiver sido danificado de alguma forma, como por exemplo por dano do cabo de alimentação elétrica ou do seu conector, por derramamento de líquido ou queda de objetos no aparelho, se o aparelho tiver sido exposto à chuva ou à umidade, não esteja operando normalmente ou tenha sofrido queda.
15. NÃO exponha o aparelho a respingos ou goteiras. NÃO coloque objetos cheios de líquidos, tais como vasos, em cima do aparelho.
16. A tomada de rede elétrica ou um acoplador do aparelho deve estar prontamente operável.
17. O ruído aéreo do aparelho não ultrapassa 70dB (A).
18. O aparelho com construção CLASSE I deve estar conectado à tomada da rede elétrica com ligação à terra.
19. Para reduzir o risco de incêndio ou choque elétrico, não exponha este aparelho a humidade.
20. Não tente alterar este produto. Isso poderá resultar em lesão pessoal e/ou falha do produto.



Este símbolo indica que existe nesta unidade tensão perigosa que apresenta risco de choque elétrico.



Este símbolo indica que existem instruções operação e manutenção importantes na literatura que acompanha esta unidade.

**ATENÇÃO:** As tensões neste equipamento podem causar acidentes fatais. Dentro dele não há nenhuma peça na qual se possa efetuar manutenção. Deixe toda a manutenção a cargo de equipe de manutenção qualificada. As certificações de segurança perderão a validade quando a tensão de operação ajustada na fábrica for alterada.

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## Feature Overview

The UHF-R® Wireless Microphone System uses the latest wireless technology, delivers outstanding audio clarity, and is rugged and reliable. It is easy to set up and operate with advanced features for professional installations requiring multiple wireless microphone systems.

### Frequency Band Selection

Shure offers wireless systems in a selection of bands that conform to the different government regulations of specific nations or geographic regions. These regulations help limit radio frequency (RF) interference among different wireless devices and prevent interference with local public communications channels, such as television and emergency broadcasts.

The system's band and frequency range are identified on the face of the receiver and transmitter. For example, "H4 518–578 MHz."

For information on bands available in your area, consult your local dealer or phone Shure. More information is also available at Shure's website ([www.shure.com](http://www.shure.com)).

### Groups and Channels

To transmit audio through a wireless system, the transmitter and receiver must be set to the same radio frequency, or channel. A wide selection of channels allows more microphones to be used at the same time, since each microphone must operate on a different channel. It also provides a greater choice of open channels—those that are free from interference from television broadcasts, electronic devices, or other wireless systems.

A *group* is a selection of compatible channels. Wireless microphones work better together when set to channels in the same group.

### Automatic Frequency Selection

The following features scan the RF environment to find the best group and channel settings for a particular installation.

- **Group Scan**—finds the group with the most open channels, then sets all networked receivers to channels in that group.
- **Channel Scan**—finds the first open channel in the currently selected group and sets the receiver to that channel.

Follow the steps on page 11 for instructions on using these features.

### Automatic Transmitter Sync

This feature automatically transfers the group and channel settings from a receiver to a transmitter. You can also program other transmitter settings on a receiver and transfer those settings too. See page 15.

### Interface Lock

This feature locks the receiver and transmitters so that users cannot change settings. The transmitter power switch can also be disabled so that the transmitter remains on if the power switch is accidentally toggled during a performance.

### Audio Gain Structure

The following settings allow you to adjust audio gain throughout the system:

- **Sensitivity** (bodypack only). A 25 dB range of gain adjustment at the bodypack transmitter input.
- **Transmitter Gain**. A 30dB range of audio gain adjustment within the transmitter (affects audio level at the receiver, as indicated by the **Audio LEDs**.)
- **Output Level**. 32 dB of attenuation at the receiver output, plus a mute setting.
- **Mic/Line switch**. –30 dB pad for matching audio levels at the receiver XLR output.

### Networking

Each receiver has an RJ-45 port on the back for connecting to other receivers over an Ethernet network. Networking receivers allows you to automatically set channels for all the receivers with a single group scan command. You can also control and monitor all networked receivers through the Shure Wireless Workbench PC software.

### RF Distribution Ports

Use the RF distribution ports to share the signal from a single pair of antennas with up to 10 single or dual receivers within the same frequency band. The RF ports eliminate the need for antenna splitters or distribution amplifiers. Active circuitry minimizes insertion losses, preserving signal quality. Input filtering keeps the signal free from out-of-band interference. Distribution circuitry is active only when additional receivers are connected to the RF distribution ports. When not used, the port circuitry is bypassed, allowing the receiver to be used as a stand-alone component.

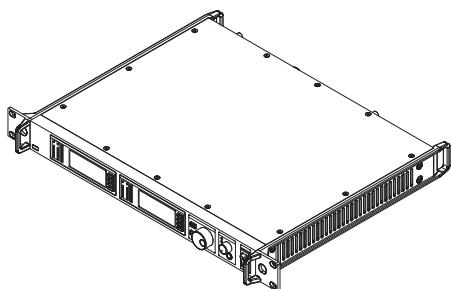
### Shure Wireless Workbench Software

The Shure Wireless Workbench software on the supplied CD includes a variety of useful tools for installing and managing multiple wireless systems. Simply install the software on your computer and connect it to a network of receivers to monitor and control receivers and transmitters throughout the network. (See page 12 for more information on networking).

Instructions on using the Wireless Workbench software are available in the online help files after you install the software.

## System Components

All systems include:



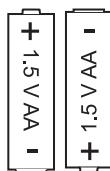
UR4S+ or UR4D+ Receiver  
(UR4D+ pictured)



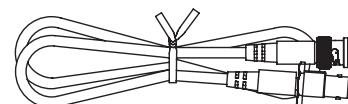
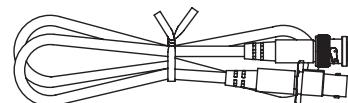
Two 1/2 Wave Antennas



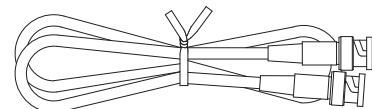
2 Antenna hole plugs  
4 Rack Mount Screws with Washers



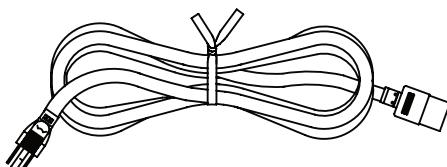
AA Batteries



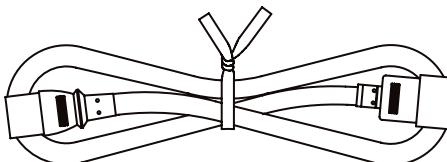
Two Antenna Cables



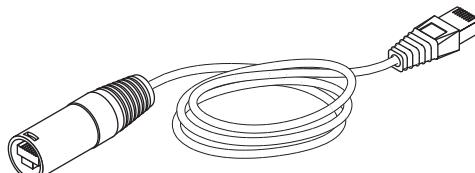
Two RF Distribution Cables



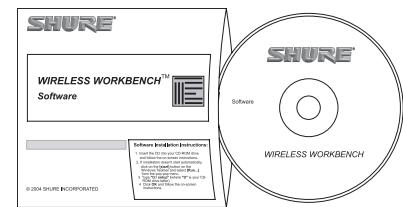
IEC Power Cable



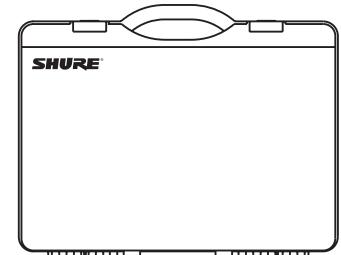
IEC Power Extension Cable



Ethernet Network Cable with "Ruggedized" plug



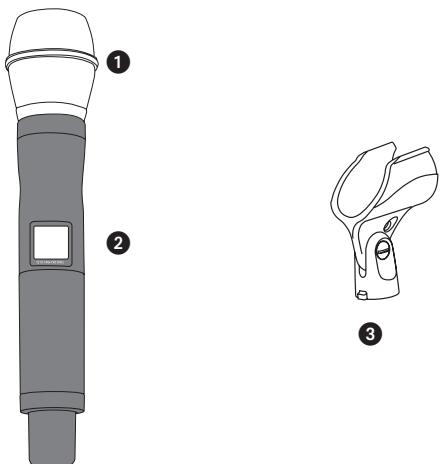
Shure's Wireless Workbench Software



Transmitter Carrying Case

### Handheld Systems Include:

- ① Microphone Head (choice of SM58®, SM86, Beta 58A®, Beta 87A™, Beta 87C™ or KSM9/BK, KSM9/SL)
- ② UR2 handheld transmitter
- ③ Microphone clip

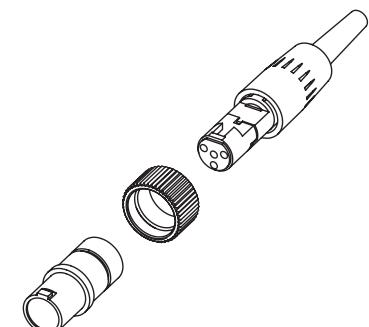


### Bodypack Systems Include:

- UR1 Bodypack Transmitter
- Threaded TA4F Adapter

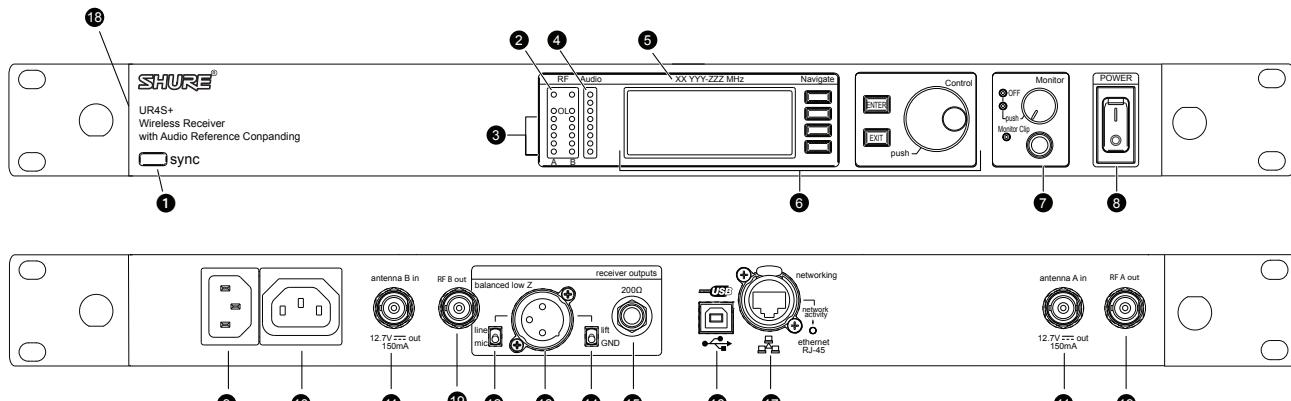


UR1



Threaded TA4F Adapter

## Receiver Controls and Connectors



- ① **SYNC** Infrared (IR) port. Transmits group, channel, and other settings to a transmitter. See page 15.
- ② **Squelch LEDs.**
  - Blue (On) = Transmitter signal detected
  - Off = no signal or signal squelched because of poor reception or no tonekey

NOTE: The receiver will not output audio unless at least one blue LED is illuminated.
- ③ **RF LEDs.** Indicate RF signal strength from the transmitter at each antenna and diversity condition.
  - Amber = normal
  - Red = overload (greater than -25 dBm)
- ④ **Audio LEDs.** Indicate audio signal strength from transmitter.
  - Green = signal present
  - Yellow = normal peak
  - Red = overload

To correct this level, adjust the transmitter gain.
- ⑤ Indicates the name and range of receiver frequency band.
- ⑥ LCD Interface. Provides a convenient way to program the receiver from the front panel (see detail on next page).
- ⑦ **Monitor.** 1/4" output jack and volume knob for headphones.
  - **Monitor Clip** LED indicates headphone audio is clipping.
  - Dual models: Push the knob to switch from receiver one to receiver two.

- ⑧ **Power switch.** Powers the unit on and off.
- ⑨ AC mains power input, IEC connector. 100–240 Vac.
- ⑩ **AC mains power passthrough (unswitched).** Use IEC extension cables to connect up to five UR4+ receivers to a single AC power source.
- ⑪ Diversity antenna inputs A and B.

Note: Antenna inputs are DC biased. Use only antenna combiners and accessories listed in page 19. Some types of antenna splitters or other products may short the DC power and damage the receiver.

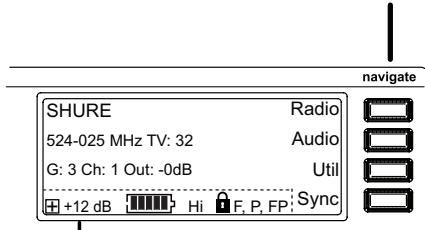
- ⑫ **Mic/Line switch.** Changes output level 30 dB (XLR output only).
- ⑬ Electrically balanced XLR output jack
- ⑭ **Lift/GND switch.** Lifts ground from Pin 1 of the XLR connector (default = **GND**).
- ⑮ Impedance balanced 1/4" output jack (200Ω)
- ⑯ USB jack for computer interface.
- ⑰ RJ-45 jack for Ethernet network interface. Accepts both regular and "ruggedized" RJ-45 plugs.
- ⑱ Temperature-activated fan ensures top performance in high temperature environments. Clean fan screen as needed to remove dust.
- ⑲ The RF distribution ports pass the RF signal from one receiver to the next, allowing a maximum of 10 receivers to share a single pair of antennas.

**Note:** The diagram above represents the UR4S single channel receiver. The UR4D dual channel receiver is functionally identical to the UR4S, adding a second LCD interface and set of output jacks for channel 2.

## Receiver LCD Interface

### Menu Access

Press the **Navigate** key next to the menu item you want to select.

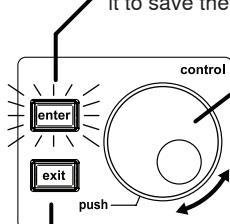


### Transmitter Status Display

Everything under the dotted line reflects the settings for the transmitter, if present. (main title screen only).

### Accept Changes

After changing a parameter, the **ENTER** button flashes. Press it to save the value.



### Cursor Control

Push the **Control wheel** to move the cursor to the next item.

Turn the **Control wheel** to change a parameter value.

### Exit/Cancel

Press the **Exit** button to cancel changes and return to the previous menu.

## Receiver Parameters

Use the following instructions to set parameters through the LCD interface.

NOTE: After adjusting a parameter, you must press the flashing **ENTER** button to accept the change.

### Group and Channel

Menu: **Radio**

- Push the **Control wheel** to move the cursor to the Group (**G**) or Channel (**Ch**) parameter.
- Turn the **Control wheel** to change the parameter.

### Frequency

Menu: **Radio**

- Push the **Control wheel** to move the cursor to the integer value (524, 025 MHz) or fractional value (524, 025) .
- Turn the **Control wheel** to change the value.

### Automatic Transmitter Sync

Menu: **Sync**

- See page 15.

### Receiver Name

Menu: **Util**

- Turn the **Control wheel** to change the letter.
- Push the **Control wheel** to move to the next letter.

### Output Level

Menu: **Audio**

This setting adjusts the signal level at the XLR and 1/4" audio output jacks.

- Turn the **Control wheel** to change the relative level in dB. (0 dB to -32 dB).
- Turn the wheel all the way down to mute the outputs.

### Squelch

Menu: **Radio > Squelch**

- Turn the **Control wheel** to change the parameter

### Receiver Lock

When locked, the receiver settings cannot be changed from the front panel. However, you can still navigate the LCD menu to view the settings (and turn the lock off).

Menu: **Util > Lock**

- Turn the **Control wheel** to toggle the lock on or off (ON or OFF).

### LCD View

Menu: **Util > Title**

- Turn the **Control wheel** to mark an item for display.
- Push the **Control wheel** to move to the next item.

### LCD Contrast

Menu: **Util > Contrast**

- Turn the **Control wheel** to increase or decrease contrast.

### Tonekey

Menu: **Radio > Squelch > Tonekey**

Tonekey squelch mutes the outputs unless the receiver detects a transmitter. Tonekey should be left on (On) except for certain troubleshooting operations.

## Network Parameters

### NOTE:

- The receiver reboots after you press **ENTER** to accept network parameter changes
- In dual models (UR4D+), these settings affect both receivers (the dual receiver is treated as a single network device).

### Set the Receiver Network Mode

Menu: Util > Network

- Push the **Control** wheel to move the cursor to the Mode parameter.
- Turn the **Control** wheel to set the receiver to one of the following values:
  - DHCP**: use this setting when connecting the receiver to a DHCP server.
  - Manual**: allows you to set the receiver to a specific IP address or subnet.

### IP Address and Subnet

Menu: Util > Network

**NOTE:** To change these settings, the network mode must be set to **Manual**.

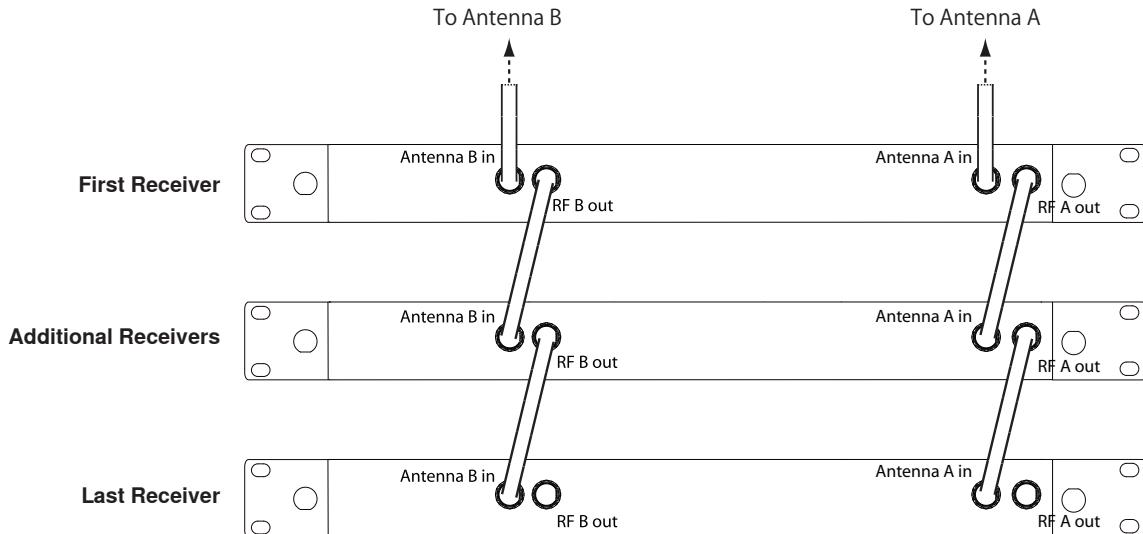
- Push the **Control** wheel to move the cursor to any of the following parameters:
  - IP** (IP address)
  - Sub** (Subnet mask)
- Turn the **Control** wheel to change the value.

## Connecting Multiple Receivers to the RF Distribution Ports

The RF distribution ports pass the RF signal from one receiver to the next, allowing a maximum of 10 single or dual receivers to share a single pair of antennas.

Use the supplied RF distribution cables to connect the ports of each receiver as shown.

**NOTE:** All receivers must be operating in the same frequency band.



## Device ID

Assists in identifying receivers through the Wireless Workbench Software (has no effect on network identification).

Menu: Util > Network

- Push the **Control** wheel to move the cursor to the **Dev ID** parameter.
- Turn the **Control** wheel to set the receiver to change the value.

**Custom Groups** This feature allows you to create your own groups of frequencies.

### Creating new groups...

Menu: Radio > Custom

- Turn the **Control** wheel to select a custom group number (U1, U2, U3, etc.)
- Push the **Control** wheel to move to the **Channel** parameter and turn it to select a channel (01, 02, 03, etc.)
- Push the **Control** wheel to move to the **Freq** parameter and select a frequency for that channel.
- Push the **NEXT** menu key to select a frequency for the next channel in that group.

## Automatic Frequency Selection

Follow these steps to use the channel scan and group scan features.

### Before you begin...

- Install the receivers in the location where they will be used and power them on.
- Mute all inputs on mixing devices connected to receivers.
- Turn off all bodypack or handheld transmitters for the systems you are setting up.
- Turn on potential sources of interference such as other wireless systems or devices, computers, CD players, effects processors, and digital rack equipment so they are operating as they would be during the presentation or performance.

### Single Receiver

1. Select **Radio > Scan > Chan Scan** using the **Navigate** keys on the receiver LCD interface.
2. Turn the **Control** wheel to select a group.
3. Press **Chan Scan**. The display indicates that the receiver is searching. Once it has finished, it displays the selected channel.
4. Press the flashing **ENTER** button to accept the suggested channel.
5. Sync the transmitter (see page 15).

### Networked or Dual Receivers

With networked or dual receivers, you can take advantage of the group scan feature to set group and channel settings for all the receivers at the same time. (See page 12 for instructions on networking.)

### Perform a group scan from any receiver...

1. Select **Radio > Scan > Group Scan** using the **Navigate** keys on the receiver LCD interface. The display indicates that the receiver is searching (**Scan In Progress**). Once it has finished, it displays the group with the most open channels.
2. If you wish, turn the **Control** wheel to change groups. The number of open channels for each group is displayed.
3. Press the flashing **ENTER** button to set all receivers to open channels in that group.

**NOTE:** The group scan feature only works for receivers in the same frequency band. For example, if you did a group scan on a "H4" band receiver, all "H4" band receivers would be set up, but not "J5" band receivers.

## Multiple Receivers—Not Networked

If your receivers are not networked (or in different bands), the group scan cannot automatically set their group and channel settings. However, you can still take advantage of the group scan feature to find the group with the most open channels and the channel scan feature to find open channels in that group.

### Find the group with the most open channels...

Perform a group scan using the steps for a networked receiver (above). However, make a note of the selected group before pressing the flashing **ENTER** button to accept it.

### Set the receivers to open channels in that group...

Perform a channel scan on the remaining receivers using the steps for a single receiver (above). Make sure to select the same group for each receiver before performing the channel scan.

**IMPORTANT:** After setting the channel for the first receiver, immediately sync the transmitter for that receiver and leave it on so that the next receiver detects that channel during its channel scan. Otherwise, all the receivers will be set to the same open channel.

**NOTE:** Receivers in different bands (H4, J5, L3, etc.) do not need to be set to the same group.

## Networking Receivers

### Basic Network

Connect receivers to an Ethernet router with DHCP service. Use Ethernet switches to extend the network for larger installations.

Use the receiver's default network setting  
(Util > Network > Mode = DHCP).

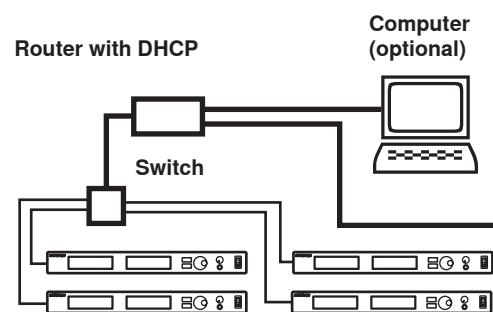
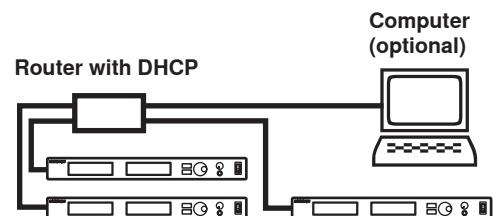
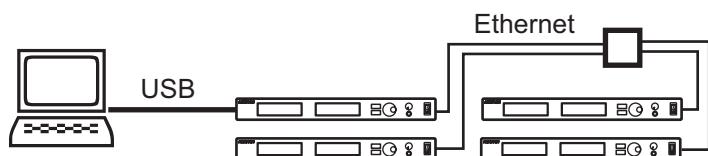
### Accessing the Network with a Computer

If you want to use the Wireless Workbench software, connect your computer to the network and install the software from the CD that came with the receiver. Make sure your computer is configured for DHCP (from Control Panel, click Network Connections. Double-click on Local Area Connection. Select Internet Protocol (TCP/IP) and click Properties. Select Obtain IP address automatically and Obtain DNS server address automatically and click OK).

**NOTE:** Some security software or firewall settings on your computer can prevent you from connecting to the receivers. If using firewall software, allow connections on port 2201.

#### Using USB...

Connect the computer to the USB port on any of the receivers to access the whole network.



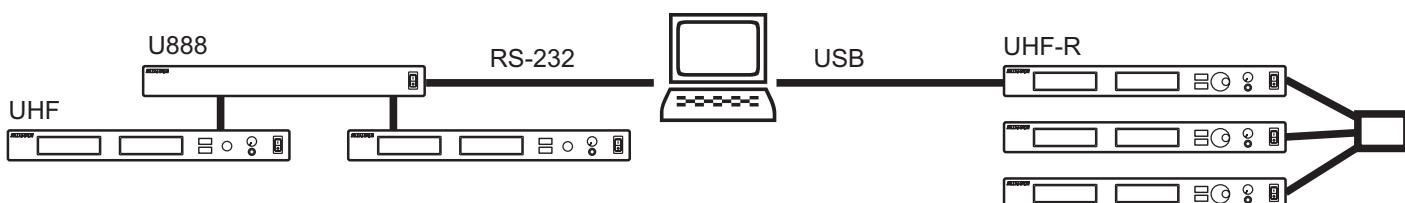
### Static IP Addressing

The receiver also supports static IP addressing. Assign your own IP addresses (Util > Network > Mode = Manual). See "Network Parameters" on page 10.

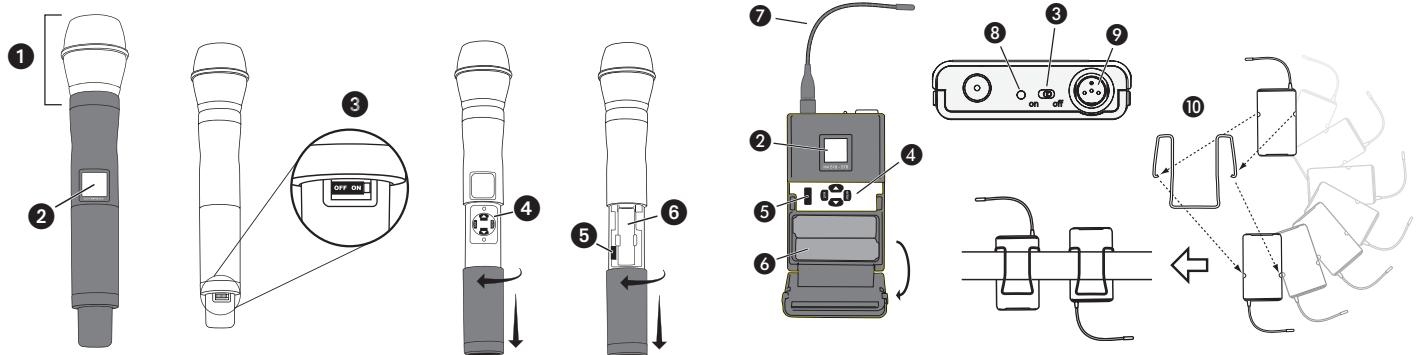
**NOTE:** Dual receivers use a single IP address, which may be set through either LCD interface.

### Existing UHF Network Installations

Both Shure's UHF-R receivers and legacy UHF receivers can be networked to the same PC and accessed using the latest Wireless Workbench software.



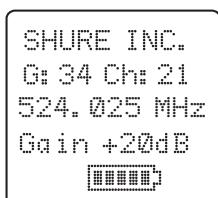
## Handheld and Bodypack Transmitter Controls and Connectors



- ① Interchangeable microphone head (BETA 87A pictured).
- ② LCD Panel.
- ③ Power Switch.
- ④ Control buttons for LCD interface.
- ⑤ Infrared (IR) port. See page 15.

- ⑥ Battery compartment.
- ⑦ Flexible Antenna.
- ⑧ Power LED.
- ⑨ 4-Pin Microphone Input Jack.
- ⑩ Reversible Belt Clip.

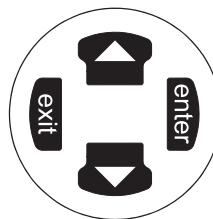
## Transmitter LCD Interface



Main Menu

**exit Key.** Move to the left, or exit without saving changes.

**Up Arrow Key.** Scroll up or increase a value.



**enter Key.** Press to select parameters and accept the selected value.

**Down Arrow Key.** Scroll down or decrease a value.

## Transmitter Batteries

Transmitters operate on standard AA batteries. Turn off the transmitter before changing the batteries.

The battery fuel gauge displayed on the transmitter LCD gives an indication of remaining battery life, as shown below.

### UR1, UR2:

Transmitter Display	Approximate Hours Remaining (alkaline batteries)	
	UR1/UR2 (Normal Power)	UR1/UR2 (High Power*)
██████	7.5 to 9.5	5 to 6
█████	5.75 to 7.5	4 to 5
████	4 to 5.75	3 to 4
███	2 to 4	1.5 to 3
██	15 minutes to 2 hours	10 minutes to 1.5 hours

\* High power setting not available with models sold in countries that prohibit its use.

## Transmitter Parameters

Press **ENTER** from the main menu to access the following parameters:

G: 34 Ch: 21  
524.025MHZ  
Gain +20dB  
SHURE INC.

**Group (G)** and **Channel (Ch)**. Must match the receiver's settings.

**Frequency (MHz)**. Manual frequency selection in 0.025 MHz increments.

**Gain (Gain)**. Adjusts audio level from -10 dB to +20 dB

**Sensitivity (Sens)** (bodypack only).

Sets audio input to +15 dB, 0 dB, or -10 dB recommended for guitars.

**Name Display**. 12-digit ASCII.

Use the following key combinations to access additional features and parameters:



### LCD Panel

Changes LCD Panel



### Frequency Lock

Toggles setting. When enabled, frequency cannot be changed, and a transmitter sync will not overwrite the frequency setting.



### Power Lock

Toggles power lock. When locked, power switch does not turn off transmitter.



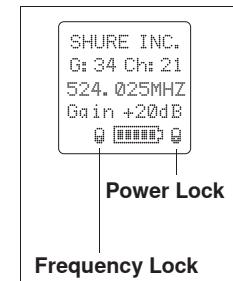
### RF power level setting\*

Use the arrow keys to select normal (10 mW) or high power (50/100 mW\*\*). Use the normal power setting to conserve batteries or prevent RF overload at the receiver.

\* High power setting not available with models sold in countries that prohibit its use.

\*\* High power value varies with model.

## Lock Indicators



## Setting Transmitter Gain

Adjust the transmitter gain and input sensitivity so that the **Audio** LEDs on the receiver peak within the yellow range during use. On the bodypack transmitter, you can change the sensitivity setting to compensate for different audio levels when connecting different instruments or microphones to the input.

To adjust gain, turn on the transmitter and press the **enter** button. Scroll down to the **Gain** parameter or the **Sens** parameter (bodypack only) and press **enter** again. Use the arrow keys to adjust the setting and press **enter** to save it (**Exit** cancels without saving).

## RF Safety Mode

This special feature temporarily mutes RF broadcast. This allows you to change frequency settings on a transmitter without accidentally "cutting in" on a channel being used by another transmitter.

1. Turn the transmitter off.
2. Hold down **exit** key while turning on the transmitter power (for handheld microphones, you need to pull the battery cover off the handle). The LCD flashes while the unit is in RF safety mode.
3. Change group and channel settings as you normally would—the transmitter will not broadcast.
4. Power the transmitter off and on to exit RF safety mode.

## Automatic Transmitter Sync

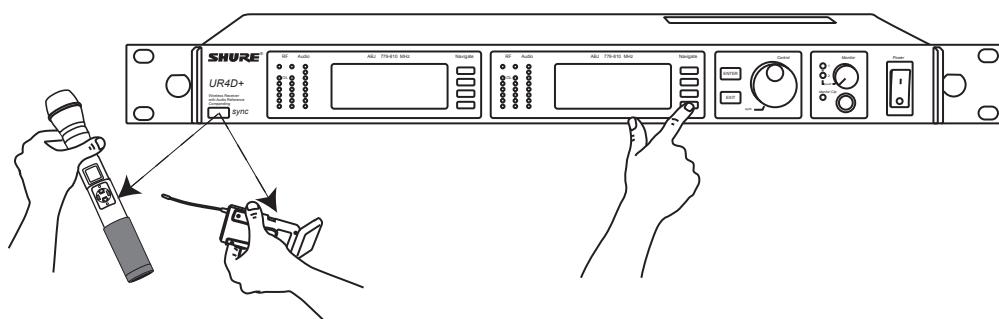
This feature automatically updates a bodypack or handheld transmitter's group and channel settings to match those of a selected receiver.

### To perform a transmitter sync...

1. Open the transmitter battery cover to display the infrared (IR) port.
2. With the IR port exposed to the receiver, select **Sync > sync** from the receiver LCD interface.

The display on the receiver indicates whether the sync was successful. If the sync fails, try again, making sure that the IR port on the transmitter is exposed and directly faces the IR port on the receiver.

**NOTE:** Close the battery door before performing a sync on other transmitters.



### To transfer other transmitter settings...

Optionally, you can transfer other transmitter settings from a receiver when you perform a sync. Use the following steps:

1. Select **Sync > Set up** from the receiver LCD interface.
2. Turn the **Control** wheel to change parameter settings.
3. Push the **Control** wheel to move to the next parameter.
4. Push the flashing **ENTER** button to save the settings.

The transmitter settings you set on the receiver remain for future syncs.

**NOTE:** If you don't want the sync to send a setting, set the parameter to **No Change**.

#### Available Settings...

The following settings are available from the **Sync > Set up** menu:

- Sensitivity (**Sens**) bodypack only
- Gain (**Gain**)
- RF Power (**Pwr**)
- Power and Frequency Lock (**Lock**), which has the following values:
  - Power lock only: (**Pwr Only**)
  - Frequency lock only: (**Freq only**)
  - Both: (**Freq and Pwr**)
  - Neither: (**Unlocked**)
- Custom Groups (**CG**):
  - On (**ON**): Send custom groups to transmitters during sync
  - Off (**OFF**): Do not send custom groups (reduces sync time)

## Troubleshooting

Issue	See Solution...
No sound	Power, Cables, or RF
Faint Sound or Distortion	Gain
Lack of range, unwanted noise bursts, or drop outs	RF
Cannot turn transmitter off or change frequency settings, or can't program receiver	Interface Locks
Excessive hum or buzzing	Ground lift

### Power

Make sure that the transmitter and receiver are receiving sufficient voltage. The receiver requires at least 90 Vac. Check the battery indicator on the transmitter and replace battery if necessary.

### Gain

Adjust the transmitter gain and sensitivity settings (see page 14) or the receiver output level (page 9), or toggle the **mic/line** switch on the back of the receiver.

### Cables

Check that all cables and connectors are in working order.

### Ground Lift

Lifting the ground on pin 1 of the XLR output on the receiver can sometimes remove hum or buzz in the audio signal. Set the **GND/LIFT** switch on the receiver to **LIFT** if you are using the XLR connector.

### Interface Locks

Both the transmitter and receiver can be locked to prevent accidental changes. On transmitters, look for a lock symbol on the LCD and use the key combinations illustrated on page 14 to turn it off.

To turn off the receiver interface lock, see page 9.

### Increasing Range

If the transmitter is more than 6 to 60 m (20 to 200 ft) from the receiver antenna, you may be able to increase range by doing one of the following:

- Reduce interference (see above)
- Increase transmitter RF power level (see page 14).
- Use an active directional antenna, antenna distribution system, or other antenna accessory to increase RF range (see page 19).

### Radio Frequency (RF)

#### Using the RF LEDs

If neither blue **RF** LED is illuminated, then the receiver is not detecting the presence of a transmitter.

The amber **RF** LEDs indicate the amount of signal being received. This signal could be from the transmitter, or it could be from an interfering source, such as a television broadcast. Turn the transmitter off. If more than one or two of the amber **RF** LEDs are still illuminated, then that channel has too much interference, and you should try a different channel.

The red **RF** LED indicates RF overload. This will usually not cause a problem unless you are using more than one system at the same time, in which case, it can cause interference between systems.

#### Eliminating RF Overload

If you see the red **RF** LED on a receiver, reduce the transmitter RF power level (see page 14) or move the transmitter further away from the receiver—at least 6 m (20 ft). If you are using active antennas, reduce antenna or amplifier gain.

#### Compatibility

- Perform a transmitter sync, or make sure the transmitter and receiver are set to the same group and channel.
- Look at the label on the transmitter and receiver to make sure they are in the same band (H4, J5, L3, etc...).

#### Reducing Interference

- Use a different channel or perform an automatic group or channel scan (see page 11).
- For multiple systems, check that all systems are set to channels in the same group (systems in different bands do not need to be set to the same group).
- Maintain a line of sight between transmitter and receiver antennas
- Move receiver antennas away from metal objects or other sources of RF interference (such as CD players, computers, digital effects, network switches, network cables and Personal Stereo Monitor (PSM) wireless systems).
- Eliminate RF overload.

## SPECIFICATIONS

Band	Range	Transmitter power (Nominal mW)	
		Handheld UR2	BodyPack UR1
G1	470-530 MHz	10 / 50	10 / 100
G1E	470-530 MHz	10 / 50	10 / 50
G7C	470.125-509.875 MHz	10 / 50	10 / 50
H4	518-578 MHz	10 / 50	10 / 100
H4E	518-578 MHz	10 / 50	10 / 50
J5	578-608, 614-638 MHz	10 / 50	10 / 100
J5E	578-638 MHz	10 / 50	10 / 50
K4E	606-666 MHz	10 / 50	10 / 50
L3	638-698 MHz	10 / 50	10 / 100
L3E	638-698 MHz	10 / 50	10 / 50
M5E	694-758 MHz	10 / 50	10 / 50
P8	710-790 MHz	10 / 50	10 / 50
P9	710-787 MHz	10 / 50	10 / 50
Q5	740-814 MHz	10 / 50	10 / 50
R9	790-865 MHz	10 / 50	10 / 50
Q6	740-752 MHz	10	10
A24	779-788 / 797-806 MHz	10	10
JBX	806-810 MHz	10	10
Q10A	740-787 MHz	10 / 50	10 / 50
R16	794-806 MHz	10 / 50	10 / 50
R18	794-806 MHz	10 only	10 only
X1	944-952 MHz	10 / 50	10 / 100

### NOTE

This Radio equipment is intended for use in musical professional entertainment and similar applications.

This Radio apparatus may be capable of operating on some frequencies not authorized in your region. Please contact your national authority to obtain information on authorized frequencies and RF power levels for wireless microphone products.

### RF Carrier Frequency Range

470-865, 944-952 MHz depending on region

### Working Range

#### UR1, UR2

150 m (500 ft.), under typical conditions

500 m (1600 ft) **line-of-sight, outdoors for a single system.**

**NOTE:** Actual working range depends on RF signal absorption, reflection and interference.

### Audio Frequency Response

40 – 18,000 Hz, (+1 dB, -3 dB).

**NOTE:** Overall system frequency response depends on the microphone element

### Gain Adjustment Range

UR1: -20 to +35 dB

-10 dB recommended for guitar

UR2: -10 to +20 dB

### Modulation

FM (45 kHz max. deviation), compander system with pre- and de-emphasis

### RF Power Output

See table above.

### Dynamic Range

>105 dB, A-weighted

### Image Rejection

>110 dB typical

### RF Sensitivity

UR4S+	UR4D+
-110 dBm Typical 12 dB SINAD	-107 dBm Typical 12 dB SINAD
-105 dBm Typical 30 dB SINAD	-102 dBm Typical 30 dB SINAD

### Spurious Rejection

>90 dB typical

### Ultimate Quieting (ref. 45 kHz deviation)

>100 dB, A-weighted

### Signal Polarity

Positive pressure on microphone diaphragm (or positive voltage applied to tip of WA302 phone plug) produces positive voltage on XLR output pin 2 with respect to XLR pin 3 and on the tip of the 1/4-inch output jack.

### System Distortion (ref. ± 45 kHz deviation, 1 kHz modulation)

<0.3% Total Harmonic Distortion typical

### Power Requirements

UR1, UR2: Two 1.5V AA batteries

UR4+: 100 to 240 VAC, 50/60 Hz

### Current Drain

UR1, UR2: 180 mA max. (normal RF power setting)

240 mA max. (high RF power setting)

UR4D+, UR4S+: 0.8 Amps max.

### Battery Life (Typical)

UR1, UR2: 9.5 hours (normal RF power),

6 hours (high RF power)

### Operating Temperature Range

-18° to +57° C (0° to +135°F)

**NOTE:** Battery characteristics may limit this range

**NOTE:** Electrical safety approval is based on a maximum ambient temperature of 35°C (95°F).

### Overall Dimensions

UR1: 98 mm L x 60 mm W x 17 mm D (3.84 x 2.38 x 0.66 in.)

UR2/SM58: 261 mm L x 51 mm Dia. (10.27 x 2 in.)

UR2/SM86: 261 mm L x 51 mm Dia. (10.27 x 2 in.)

UR2/SM87A: 254 mm x 51 mm Dia. (10 x 2 in.)

UR2/KSM9/BK, UR2/KSM9/SL: 250 mm x 49 mm Dia. (9 7/8 x 1 15/16 in.)

UR2/BETA 58: 258 mm L x 51 mm Dia. (10.15 x 2 in.)

UR2/BETA 87A, UR2/BETA 87C: 254 mm x 51 mm Dia. (10 x 2 in.)

UR4S+/UR4D+: 44 mm H x 483 mm W x 366 mm D

(1.72 x 19.00 x 14.39 in.)

### Net Weight

UR1: 97 g (3.4 oz.) without batteries

UR2/SM58: 356 g (12.6 oz.) without batteries

UR2/BETA 58: 314 g (11.1oz.) without batteries

UR2/SM86: 317 g (11.2 oz.) without batteries

UR2/SM87A: 298 g (10.5 oz.) without batteries

UR2/KSM9/BK, UR2/KSM9/SL: 410 g (14.5 oz.) without batteries

UR2/BETA 87A, U2/BETA 87C: 325 g (11.5 oz) without batteries

UR4S+: 5.0 kg (10.9 lbs)

UR4D+: 5.1 kg (11.2 lbs)

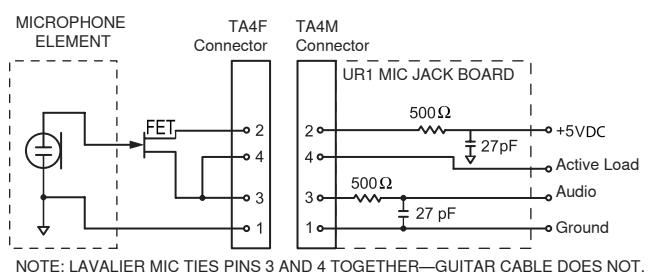
### Housing:

UR1: Cast magnesium

UR2: Aluminum die-cast handle and aluminum machined battery cup

UR4S+, UR4D+: Galvanized steel

### Wiring for TA4F:



## Inputs and Outputs

### UR1 Transmitter Audio Input

Connector:	4-Pin male mini connector (TA4M)
Input Configuration:	Unbalanced, active
Maximum Input Level: (1 kHz, 1% THD)	+10 dBu (sensitivity 0 dB) +20 dBu (sensitivity -10 dB)
TA4M Connector Pin Assignments:	Pin 1: Ground Pin 2: +5 Vdc bias Pin 3: Audio, 200 kΩ Pin 4: Tied through active load (on main board) to Ground. (On instrument adapter cable, Pin 4 floats)

### UR2 Transmitter Audio Input

Input Configuration:	Unbalanced, active
Actual Impedance:	>1 MΩ
Maximum Input Level: 1 kHz, 1% THD	+4.8 dBu

### UR1 Transmitter RF Output

Connector:	SMA
Actual Impedance:	50 Ω
Pin Assignments:	Shell = Ground Center = Signal

### RF Distribution Ports

	RF IN	RF OUT
Connector Type	BNC	BNC
Vdc Bias	12 Vdc @ 150 mA	N/A

### Receiver Input

	Antenna	Power
Connector Type:	BNC	IEC
Actual Impedance:	50 Ω	-
Nominal Input Level:	-95 to -30 dBm	100-240 VAC, 50/60 Hz
Maximum Input Level:	-20 dBm	240 VAC, + 10%, 50/60 Hz
Pin Assignments:	Shell = Ground Center = Signal	IEC Standard
Bias Voltage*	12 Vdc @ 150 mA maximum	N/A

\* For remote antenna amplifiers

### Receiver Audio Output

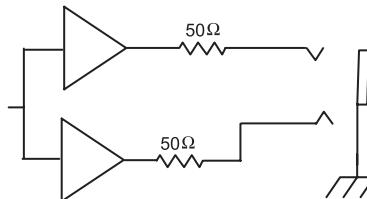
	Monitor (1/4" Headphone)	1/4" Phone	XLR
Output Configuration:	Unbalanced mono, 1/4 inch	Impedance Balanced	Electrically Balanced
Actual Impedance:	50 Ω	200 Ω	200 Ω (active balanced) (150 Ω mic)
Maximum Output Level:	1 Watt @ 63 Ω	+18 dBu	+24 dBu (-6 dBu mic) with 100 Hz modulating tone
Pin Assignments:	Tip = Hot Ring = Hot Sleeve = Gnd	Tip = Hot Ring = no signal Sleeve = Gnd	1 = Ground 2 = Audio + 3 = Audio -
Phantom Power Protection:	No	Yes	Yes

### Computer/Network Interface

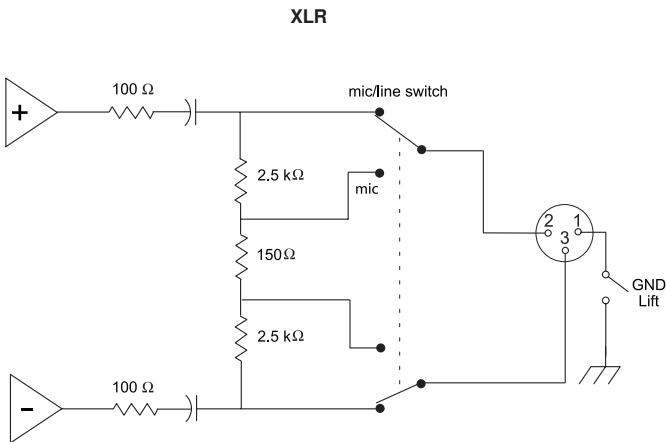
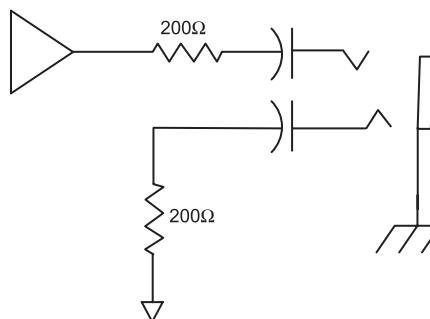
Ethernet	USB*
RJ45	USB Series B Receptacle

\* USB-IF logo is a trademark of Universal Serial Bus Implementers Forum, Inc.

### 1/4" Monitor/headphone



### 1/4" Phone



## Replacement Parts and Accessories

### Furnished Accessories

<b>Microphone Stand Adapter (UR2)</b>	WA371
<b>Threaded locking Adapter (with TA4F), UR1</b>	WA340
<b>Zipper Bag (UR1)</b>	26A13
<b>Zipper Bag (UR2)</b>	26A14
<b>Antenna Extension Cables (2)</b>	95B9023
<b>RF Distribution Cables (2)</b>	95N2035
<b>Antenna (UR1) 470-530 MHz</b>	UA700
<b>Antenna (UR1) 518-578 MHz</b>	UA710
<b>Antenna (UR1) 578-698 MHz</b>	UA720
<b>Antenna (UR1) 740-865 MHz</b>	UA730
<b>Antenna (UR1) 944-952 MHz</b>	UA740
<b>Two Antennas (UR4+), Band Dependent (see table)</b>	UA820
<b>Transmitter Carrying Case</b>	95C9053

### Optional Accessories

<b>SM58 Head with Grille</b>	RPW112
<b>SM86 Head with Grille</b>	RPW114
<b>BETA 58 Head with Grille</b>	RPW118
<b>BETA 87A Head with Grille</b>	RPW120
<b>BETA 87C Head with Grille</b>	RPW122
<b>SM87A Head with Grille</b>	RPW116
<b>KSM9/SL Head with Grille</b>	RPW180
<b>KSM9/BK Head with Grille</b>	RPW184
<b>Matte Silver Grille (SM58)</b>	RK143G
<b>Matte Silver Grille (SM86)</b>	RPM266
<b>Matte Silver Grille (BETA 58)</b>	RK265G
<b>Black Grille (SM87)</b>	RK214G
<b>Matte Silver Grille (BETA 87A)</b>	RK312
<b>Matte Silver Grille (BETA 87C)</b>	RK312
<b>Black Grille (BETA 58)</b>	RK323G
<b>Black Grille (BETA 87A/BETA 87C)</b>	RK324G
<b>Champagne Grille (KSM9/SL)</b>	RPM260
<b>Black Grille (KSM9/BK)</b>	RPM264
<b>Popper Stopper' Windscreen</b>	A85WS
<b>Belt Clip (UR1)</b>	44A8031
<b>Bodypack Pouch (Black), UR1</b>	WA580B
<b>Bodypack Pouch (White), UR1</b>	WA580W

## Architects' and Engineers' Specifications

The wireless system shall operate in the UHF band between 470-865 MHz and 944-952 MHz, with the specific range being dependent on the user's locale. The system shall include the option of changing the operating frequency in order to avoid RF interference, enabling up to 160 systems to operate simultaneously in the same location. Preconfigured group, channel and frequency setups shall be available to ensure that multiple systems in use do not interfere with one another.

All transmitters shall be powered by 2 AA batteries and shall have a power on/off switch. The bodypack will have an LED indicating that power is on. Available transmitters shall include: a body pack for use with electric guitars, basses, and other electric instruments, and a handheld microphone for vocals. The transmitters shall have a DC/DC converter to ensure consistent performance, even if battery voltages change.

The receiver shall have a user-programmable, menu-driven LCD showing group, channel, frequency, name, squelch level, and locked/unlocked status. The system shall use technology such as MARCAD, signal combining circuitry to improve reception, minimize signal dropouts, and achieve the best possible signal-to-noise ratio. An equalizer, tone key squelch, and noise squelch circuitry shall be built into the system to provide optimal sound quality and minimize unwanted noise. The receiver shall include dual RF meters (one for each antenna), an audio level meter, and a Networking Interface connector for computer control and monitoring. The receiver shall have a volume control and an adjustable noise squelch control.

The system shall be the Shure UHF-R Wireless.

## Antenna Combiners and Accessories

- Antennas and receivers must be from the same frequency band.
- The supplied 1/2 wave antennas can be remotely mounted or mounted directly to the UA845.
- Antennas and cables for use with the UA845 can also be used with stand-alone UHF-R receivers.

<b>Passive Antenna/Splitter Combiner Kit (recommended for 2 receivers)</b>	UA221
<b>UHF Antenna Power Distribution Amplifier</b>	UA845-
<b>U.S.A. (470-952 MHz)</b>	UA845SWB
<b>Europe</b>	UA845E
<b>UK</b>	UA845UK
<b>1/2 Wave, Omnidirectional, Wideband Antenna (470-952 MHz)</b>	UA860SWB
<b>Active Directional Wideband Antenna (470-698 MHz)</b>	UA870USTV
<b>Active Directional Narrowband Antenna (944-952 MHz)</b>	UA870X
<b>Wideband In-Line RF Amplifier (470-698 MHz)</b>	UA830USTV
<b>Narrowband In-Line RF Amplifier (944-952 MHz)</b>	UA830X
<b>Passive Unidirectional Wideband Antenna (470-952 MHz)</b>	PA805SWB
<b>Passive Unidirectional Narrow band Antenna (944-952 MHz)</b>	PA805X
<b>1/2 wave antennas (2)</b>	
<b>G1 Band</b>	UA820G
<b>H4E, H4 Bands</b>	UA820H4
<b>J5E, J5 Bands</b>	UA820J
<b>L3E, L3 Bands</b>	UA820L3
<b>Q5, Q6, Q10A Bands</b>	UA820Q
<b>R9, ABJ Bands</b>	UA820A
<b>X1 Band</b>	UA820X
<b>10' Antenna Cable</b>	PA725
<b>25' Antenna Cable (RG-8/X)</b>	UA825
<b>50' Antenna Cable (RG-8/X)</b>	UA850
<b>100' Antenna Cable</b>	UA8100

# CERTIFICATION

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## **UR1, UR2, UR4S+, UR4D+**

This Class B digital apparatus complies with Canadian ICES-003.

Cet appareil numérique de la classe B est conforme à la norme NMB-003 du Canada.

Meets requirements of EMC standards EN 300 422 Parts 1 and 2 and EN 301 489 Parts 1 and 9.

Meets essential requirements of European R&TTE Directive 99/5/EC, eligible to bear the CE mark.

## **UR1, UR2**

Certified under FCC Part 74. (FCC ID: DD4UR1, DD4UR2). Certified by IC in Canada under RSS-123 and RSS-102. (IC: 616A-UR1, 616A-UR2, 616A-UR1G, 616A-UR2G).

Emission Designator: 120KF3E

## **UR4S+, UR4D+**

Approved under the Declaration of Conformity (DoC) provision of FCC Part 15. Certified in Canada by IC to RSS-123. (IC: 616A-UR4P).

Conforms to Australian EMC requirements and is eligible for C-Tick marking.

Have been granted the following Country Safety Approvals:

cULus Mark for US and Canada: Meets UL6500 and CSA/CAN E60065. UL GS-Certified to EN60065.

Operation of this device is subject to the following two conditions: (1) this device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of the device.

The CE Declaration of Conformity can be obtained from Shure Incorporated or any of its European representatives. For contact information please visit [www.shure.com](http://www.shure.com)

The CE Declaration of Conformity can be obtained from: [www.shure.com/europe/compliance](http://www.shure.com/europe/compliance)

Authorized European representative:

Shure Europe GmbH  
Headquarters Europe, Middle East & Africa  
Department: EMEA Approval  
Wannenacker Str. 28  
D-74078 Heilbronn, Germany  
Phone: +49 7131 72 14 0  
Fax: +49 7131 72 14 14  
Email: [EMEAsupport@shure.de](mailto:EMEAsupport@shure.de)

## LICENSING INFORMATION

Licensing: A ministerial license to operate this equipment may be required in certain areas. Consult your national authority for possible requirements. Changes or modifications not expressly approved by Shure Incorporated could void your authority to operate the equipment. Licensing of Shure wireless microphone equipment is the user's responsibility, and licensability depends on the user's classification and application, and on the selected frequency. Shure strongly urges the user to contact the appropriate telecommunications authority concerning proper licensing, and before choosing and ordering frequencies.

## INFORMATION TO USER

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer.

Note: EMC conformance testing is based on the use of supplied and recommended cable types. The use of other cable types may degrade EMC performance.

Changes or modifications not expressly approved by the manufacturer could void the user's authority to operate the equipment.

FREQUENCY BANDS G1, G7C, H4, H4E, J5, J5E, K4E, L3, L3E, M5E, PS8, P9 Q5, R9, A24, JBX, Q6, Q10A, R16, AND R18

SYSTÈMES COMPATIBLES EN FRÉQUENCE DANS LA BANDES G1, G7C, H4, H4E, J5, J5E, K4E, L3, L3E, M5E, PS8, P9 Q5, R9, A24, JBX, Q6, Q10A, R16 ET R18

FREQUENZKOMPATIBLE SYSTEME IM FREQUENZBEREICH G1, G7C, H4, H4E, J5, J5E, K4E, L3, L3E, M5E, PS8, P9, Q5, R9, A24, JBX, Q6, Q10A, R16 UND R18

SISTEMAS CON FRECUENCIAS COMPATIBLES EN LAS BANDAS G1, G7C, H4, H4E, J5, J5E, K4E, L3, L3E, M5E, PS8, P9, Q5, R9, A24, JBX, Q6, Q10A, R16 Y R18

SISTEMI COMPATIBILI IN FREQUENZA NELLA BANDAS G1, G7C, H4, H4E, J5, J5E, K4E, L3, L3E, M5E, PS8, P9, Q5, R9, A24, JBX, Q6, Q10A, R16 E R18

SISTEMAS COM FREQÜÊNCIAS COMPATÍVEIS DA NA FAIXA G1, G7C, H4, H4E, J5, J5E, K4E, L3, L3E, M5E, PS8, P9, Q5, R9, A24, JBX, Q6, Q10A, R16 E R18

## FREQUENCY BAND G1E (470.125–529.875 MHz)

Channel	Group 1	Group 2	Group 3	Group 4	Group 5	Group 6	Group 7	Group 8	Group 9	Group 10
	Full Range max. # of compatible frequencies (option 1) 470 - 530 MHz	Full Range max. # of compatible frequencies (option 2) 470 - 530 MHz	France preferred User Group A (option 1) 470 - 530 MHz	France preferred User Group A (option 2) 470 - 530 MHz	France preferred User Group B (option 1) 470 - 530 MHz	France preferred User Group B (option 2) 470 - 530 MHz	France preferred User Group C (option 1) 470 - 530 MHz	France preferred User Group C (option 2) 470 - 530 MHz	Compatible with Group 9 of H4E, J5E and L3E (all these bands completely available)	Compatible with Group 10 of H4E, J5E and L3E (all these bands completely available)
1	470.525	529.500	471.250	470.750	474.225	470.500	470.300	470.300	471.150	528.600
2	470.975	529.050	471.750	472.500	474.975	472.775	471.000	471.000	472.550	527.200
3	472.000	528.025	472.500	473.250	476.900	474.225	474.775	472.975	472.925	526.825
4	473.725	526.300	479.500	475.250	477.300	476.900	476.700	477.100	474.225	525.525
5	476.725	523.300	481.250	476.250	478.500	482.225	477.100	484.700	477.775	521.975
6	477.550	522.475	483.250	479.500	482.975	485.300	477.900	485.500	482.825	516.925
7	478.875	521.150	484.250	486.750	488.025	486.100	485.100	488.975	485.475	514.275
8	480.850	519.175	492.250	487.250	489.500	486.500	490.025	492.000	487.575	512.175
9	481.200	518.825	496.500	495.750	492.900	490.975	494.300	493.500	488.350	511.400
10	481.775	518.250	499.750	507.500	508.900	505.500	504.225	504.975	490.825	508.925
11	485.200	514.825	513.250	508.250	509.700	510.500	508.700	510.300	491.800	507.950
12	494.275	505.750	513.750	511.500	512.025	512.775	509.900	514.025	494.775	504.975
13	503.650	496.375	515.250	512.500	516.500	516.500	516.700	516.700	503.225	496.525
14	506.075	493.950	519.750	513.750	520.025	522.225	519.000	519.000	505.575	494.175
15	512.300	487.725	520.500	519.750	522.225	522.975	522.025	524.700	470.500	529.250
16	513.500	486.525	523.500	522.500	524.900	524.900	522.775	525.100	476.550	523.200
17	514.875	485.150	527.500	527.250	526.100	526.100	525.500	525.900	478.700	521.050
18	518.075	481.950	528.500	527.750	526.500	526.500	525.900	528.975	502.200	497.550
19	522.475	477.550	529.750	529.250	529.500	472.025	472.225	472.225	509.950	489.800
20	523.075	476.950	474.500	471.500	470.500	477.300	478.300	474.775	511.025	488.725
21	525.400	474.625	475.500	474.500	472.025	482.975	482.775	487.000	473.675	526.075
22	525.775	474.250	478.750	480.500	490.225	488.025	487.000	488.225	475.025	524.725
23	526.475	473.550	480.500	483.250	493.300	492.900	488.225	490.025	484.650	515.100
24	527.350	472.675	482.500	484.250	494.100	497.500	492.700	490.775	487.150	512.600
25	529.500	470.525	487.500	489.750	494.500	500.900	493.900	494.300	490.275	509.475
26	487.475	512.550	498.500	490.500	496.775	501.300	501.100	506.025	493.650	506.100
27	496.375	503.650	499.250	491.750	506.225	506.225	506.025	506.775	499.475	500.275
28	502.825	497.200	503.500	494.750	508.500	509.300	506.775	511.000	501.600	498.150
29	507.000	493.025	504.500	498.500	510.100	512.025	510.300	518.300	505.100	494.650
30	472.775	527.250	505.250	499.500	525.300	516.900	517.500	520.225	505.875	493.875
31	483.300	516.725	505.750	503.750	528.775	525.300	520.225	528.225	506.425	493.325
32	483.725	516.300	511.500	504.500		528.775	520.975		513.150	486.600
33	486.425	513.600	515.750	510.750			527.000		529.250	470.500
34	488.325	511.700	519.250	514.500						
35	489.375	510.650	526.750	523.250						
36	498.825	501.200	529.250	524.250						
37	499.350	500.675		529.750						
38	500.725	499.300								
39	505.725	494.300								
40	509.100	490.925								
41	509.500	490.525								
42	514.000	486.025								
43	516.975	483.050								
44	524.650	475.375								
45	528.675	471.350								

## G1E FREQUENCY BAND (470.125–529.875 MHz) Continued

Group	11	12	13	14	15	16	17	18	19	20	21
Channel	European TV channel 21 optimized 470 - 478 MHz	European TV channel 22 optimized 478 - 486 MHz	European TV channel 23 optimized 486 - 494 MHz	European TV channel 24 optimized 494 - 502 MHz	European TV channel 25 optimized 502 - 510 MHz	European TV channel 26 optimized 510 - 518 MHz	European TV channel 27 optimized 518 - 526 MHz	European TV channel 27 optimized 518 - 526 MHz	Full Range (identical with UHF-R G1 / group 9) 470 - 530 MHz	Full Range (identical with UHF-R G1 / group 10) 470 - 530 MHz	Belgium preferred "PRO" 510 - 526 MHz
1	478.100	486.100	494.100	502.100	510.100	518.100	470.250	470.125	470.375	470.375	510.375
2	471.350	479.350	487.350	495.350	503.350	511.350	519.350	470.875	470.750	471.000	511.200
3	471.975	479.975	487.975	495.975	503.975	511.975	519.975	471.775	471.650	471.900	512.325
4	472.800	480.800	488.800	496.800	504.800	512.800	520.800	473.075	472.950	473.200	513.650
5	473.325	481.325	489.325	497.325	505.325	513.325	521.325	474.025	473.900	474.150	514.675
6	475.775	483.775	491.775	499.775	507.775	515.775	523.775	475.700	475.575	475.825	515.175
7	476.200	484.200	492.200	500.200	508.200	516.200	524.200	476.525	476.400	476.650	515.900
8	476.925	484.925	492.925	500.925	508.925	516.925	524.925	476.975	476.850	477.100	517.325
9	477.850	485.850	493.850	501.850	509.850	517.850	525.850	478.600	478.475	478.725	521.900
10	477.275	485.275	493.275	501.275	509.275	517.275	525.275	479.425	479.300	479.550	522.525
11								483.475	483.350	483.600	525.275
12								483.900	483.775	484.025	525.675
13								484.575	484.450	484.700	514.000
14								485.050	484.925	485.175	522.975
15								489.450	489.325	489.575	511.850
16								491.875	491.750	492.000	523.675
17								494.100	493.975	494.225	524.575
18								495.650	495.525	495.775	
19								496.575	496.450	496.700	
20								497.725	497.600	497.850	
21								498.450	498.325	498.575	
22								500.550	500.425	500.675	
23								500.950	500.825	501.075	
24								501.625	501.500	501.750	
25								503.900	503.775	504.025	
26								508.325	508.200	508.450	
27								510.275	510.150	510.400	
28								510.900	510.775	511.025	
29								511.850	511.725	511.975	
30								513.075	512.950	513.200	
31								514.100	513.975	514.225	
32								514.600	514.475	514.725	
33								518.675	518.550	518.800	
34								519.350	519.225	519.475	
35								520.425	520.300	520.550	
36								521.800	521.675	521.925	
37								522.550	522.425	522.675	
38								523.525	523.400	523.650	
39								526.050	525.925	526.175	
40								527.375	527.250	527.500	
41								528.025	527.900	528.150	
42								529.300	529.175	529.425	
43								529.750	529.625	529.875	

#### H4 FREQUENCY BAND (518.000 - 578.000 MHz)

Channel	Group 1	Group 2	Group 3	Group 4	Group 5	Group 6	Group 7	Group 8	Group 9	Group 10
	TV 22 & 27	TV 23 & 28	TV 24 & 29	TV 25 & 30	TV 26 & 31	All Bands	All Bands	Full Spectrum	Full Spectrum	Full Spectrum
1	518.350	524.350	530.350	536.350	542.350	519.000	519.250	518.100	518.900	518.050
2	518.850	524.850	530.850	536.850	542.850	519.425	521.625	518.825	519.625	518.550
3	519.575	525.575	531.575	537.575	543.575	522.100	525.800	519.350	520.150	519.500
4	520.500	526.500	532.500	538.500	544.500	524.525	526.375	520.375	521.175	519.900
5	521.625	527.625	533.625	539.625	545.625	525.525	528.075	521.725	522.525	520.750
6	522.450	528.450	534.450	540.450	546.450	526.075	533.950	522.350	523.150	523.750
7	523.075	529.075	535.075	541.075	547.075	527.325	535.500	525.150	525.950	530.500
8	523.475	529.475	535.475	541.475	547.475	528.100	538.350	530.250	531.050	532.600
9	548.125	554.125	560.125	566.125	572.125	537.475	542.400	530.675	531.475	534.150
10	548.650	554.650	560.650	566.650	572.650	540.450	543.475	532.750	533.550	538.925
11	549.675	555.675	561.675	567.675	573.675	541.600	547.350	534.625	535.425	541.750
12	551.025	557.025	563.025	569.025	575.025	544.925	553.625	543.475	544.275	545.500
13	551.750	557.750	563.750	569.750	575.750	551.625	561.075	544.700	545.500	546.425
14	552.150	558.150	564.150	570.150	576.150	553.300	565.700	547.325	548.125	547.875
15	552.975	558.975	564.975	570.975	576.975	555.300	569.050	548.775	549.575	550.500
16	553.600	559.600	565.600	571.600	577.600	557.075	570.775	549.700	550.500	551.725
17						561.100	571.550	553.450	554.250	560.575
18						566.000	572.800	556.275	557.075	562.450
19						567.550	573.425	561.050	561.850	564.525
20						574.475	573.825	562.600	563.400	564.950
21						518.350	519.875	564.700	565.500	570.050
22						544.325	520.275	571.450	572.250	572.850
23						548.550	522.425	574.450	575.250	573.475
24						554.050	546.925	575.300	576.100	574.825
25						559.900	555.750	575.700	576.500	575.850
26						520.125	521.050	576.650	577.450	576.375
27						535.025	536.475	577.150	577.950	577.100
28						550.450	537.250	523.850	524.650	522.450
29						573.625	539.250	548.300	549.100	546.900
30						575.850	544.000	572.750	573.550	571.350
31						522.650	548.950	529.350	530.150	524.425
32						531.375	552.050	533.950	534.750	528.625
33						538.475	561.975	537.925	538.725	529.675
34						539.100	566.200	561.950	562.750	533.250
35						554.450	567.125	565.525	566.325	557.275
36						564.775	575.050	566.575	567.375	561.250
37								570.775	571.575	565.850
38								535.750	536.550	525.775
39								551.700	552.500	543.500
40								569.425	570.225	559.450

**J5 FREQUENCY BAND (578.000 - 607.975 - 614.025 - 638.000 MHz)**

Channel	Group 1	Group 2	Group 3	Group 4	Group 5	Group 6	Group 7	Group 8	Group 9	Group 10
	TV 32	TV 33 & 38	TV 34 & 39	TV 35 & 40	TV 36 & 41	All Bands	All Bands	Full Spectrum	Full Spectrum	Full Spectrum
1	578.350	584.350	590.350	596.350	602.350	578.625	581.650	578.375	578.125	578.100
2	578.850	584.850	590.850	596.850	602.850	579.125	586.625	579.400	578.550	579.125
3	579.575	585.575	591.575	597.575	603.575	584.825	588.025	581.750	579.200	581.475
4	580.500	586.500	592.500	598.500	604.500	586.475	592.275	582.625	580.600	582.350
5	581.625	587.625	593.625	599.625	605.625	587.750	595.225	584.675	581.150	584.400
6	582.450	588.450	594.450	600.450	606.450	588.500	597.675	587.350	584.500	587.075
7	583.075	589.075	595.075	601.075	607.075	592.950	601.750	588.825	585.375	588.550
8	583.475	589.475	595.475	601.475	607.475	598.975	602.175	589.225	588.950	588.950
9		614.125	620.125	626.125	632.125	599.875	604.300	594.200	591.175	593.925
10		614.650	620.650	626.650	632.650	615.900	607.675	594.725	593.925	594.450
11		615.675	621.675	627.675	633.675	617.600	614.425	596.975	595.225	596.700
12		617.025	623.025	629.025	635.025	618.400	620.650	603.475	604.150	603.200
13		617.750	623.750	629.750	635.750	621.350	622.025	606.050	604.875	605.775
14		618.150	624.150	630.150	636.150	621.750	623.800	607.725	606.275	607.450
15		618.975	624.975	630.975	636.975	627.925	625.000	616.200	618.025	615.925
16		619.600	625.600	631.600	637.600	629.975	630.175	619.250	620.825	618.975
17						631.025	632.250	620.600	621.975	620.325
18						633.175	633.750	622.525	625.325	622.250
19						635.050	636.275	628.650	627.250	628.375
20						636.650	637.075	630.200	630.500	629.925
21						585.400	587.450	631.175	632.325	630.900
22						587.300	598.975	632.375	633.100	632.100
23						602.025	627.775	632.875	635.275	632.600
24						616.425	632.825	635.825	636.175	635.550
25						619.975	637.575	636.900	636.700	636.625
26						591.225	583.175	637.625	637.700	637.350
27						603.075	588.950	581.200	582.425	580.925
28						605.650	590.825	586.450	587.650	586.175
29						628.625	596.900	592.725	588.050	592.450
30						631.700	599.425	597.900	598.350	597.625
31						580.225	600.700	598.600	599.575	598.325
32						592.500	614.975	604.000	600.600	603.725
33						601.575	616.700	605.350	603.700	605.075
34						606.075	619.525	614.450	607.075	614.175
35						607.575	623.050	615.600	614.925	615.325
36						633.650	635.775	617.150	615.600	616.875
37								620.175	617.025	619.900
38								621.725	619.900	621.450
39								623.850	622.500	623.575
40								634.225	631.150	633.950

### L3 FREQUENCY BAND (638.000 - 697.875 MHz)

Channel	Group 1	Group 2	Group 3	Group 4	Group 5	Group 6	Group 7	Group 8	Group 9	Group 10
	TV 42 & 47	TV 43 & 48	TV 44 & 49	TV 45 & 50	TV 46 & 51	All Bands	All Bands	Full Spectrum	Full Spectrum	Full Spectrum
1	638.350	644.350	650.350	656.350	662.350	643.775	649.800	638.100	638.900	638.050
2	638.850	644.850	650.850	656.850	662.850	644.375	650.800	638.825	639.625	638.550
3	639.575	645.575	651.575	657.575	663.575	651.900	653.000	639.350	640.150	639.500
4	640.500	646.500	652.500	658.500	664.500	654.150	659.550	640.375	641.175	639.900
5	641.625	647.625	653.625	659.625	665.625	660.375	660.775	641.725	642.525	640.750
6	642.450	648.450	654.450	660.450	666.450	661.125	661.350	642.350	643.150	643.750
7	643.075	649.075	655.075	661.075	667.075	662.875	665.425	645.150	645.950	650.500
8	643.475	649.475	655.475	661.475	667.475	664.300	668.050	650.250	651.050	652.600
9	668.125	674.125	680.125	686.125	692.125	667.125	675.575	650.675	651.475	654.150
10	668.650	674.650	680.650	686.650	692.650	669.500	679.750	652.750	653.550	658.925
11	669.675	675.675	681.675	687.675	693.675	679.000	683.450	654.625	655.425	661.750
12	671.025	677.025	683.025	689.025	695.025	683.525	684.875	663.475	664.275	665.500
13	671.750	677.750	683.750	689.750	695.750	688.825	686.800	664.700	665.500	666.425
14	672.150	678.150	684.150	690.150	696.150	689.750	691.750	667.325	668.125	667.875
15	672.975	678.975	684.975	690.975	696.975	690.425	692.300	668.775	669.575	670.500
16	673.600	679.600	685.600	691.600	697.600	691.500	693.050	669.700	670.500	671.725
17						693.525	693.500	673.450	674.250	680.575
18						694.725	695.550	676.275	677.075	682.450
19						697.075	696.200	681.050	681.850	684.525
20						697.575	697.100	682.600	683.400	684.950
21						649.125	645.875	684.700	685.500	690.050
22						658.825	658.800	691.450	692.250	692.850
23						662.200	663.675	694.450	695.250	693.475
24						677.025	664.800	695.300	696.100	694.825
25						682.675	678.400	695.700	696.500	695.850
26						650.050	646.825	696.650	697.450	696.375
27						651.450	648.050	697.150	697.950	697.100
28						671.075	651.275	643.850	644.650	642.450
29						677.600	657.075	668.300	669.100	666.900
30						695.200	662.350	692.750	693.550	691.350
31						647.450	674.950	649.350	650.150	644.425
32						648.400	679.350	653.950	654.750	648.625
33						666.000	680.750	657.925	658.725	649.675
34						675.900	682.500	681.950	682.750	653.250
35						679.525	685.450	685.525	686.325	677.275
36						696.250	689.700	686.575	687.375	681.250
37								690.775	691.575	685.850
38								655.750	656.550	645.775
39								671.700	672.500	663.500
40								689.425	690.225	679.450

## H4E FREQUENCY BAND (518.000 - 578.000 MHz)

Channel	Full Range max. # of comp. frequencies (option 1)	Full Range max. # of comp. frequencies (option 2)	France preferred: User Group A (option 1)	France preferred: User Group A (option 2)	France preferred: User Group B (option 1)	France preferred: User Group B (option 2)	France preferred: User Group C (option 1)	France preferred: User Group C (option 2)	All Bands	All Bands
	Group 1	Group 2	Group 3	Group 4	Group 5	Group 6	Group 7	Group 8	Group 9	Group 10
1	518.100	518.900	518.750	518.750	518.100	518.500	520.225	518.300	518.500	518.575
2	518.825	519.625	519.500	519.500	521.500	520.025	522.025	519.000	522.250	520.300
3	519.350	520.150	521.250	520.500	522.975	522.225	522.775	522.025	523.675	521.750
4	520.375	521.175	523.250	521.750	525.700	522.975	525.900	524.000	524.500	522.300
5	521.725	522.525	524.250	523.250	532.500	524.900	526.300	530.025	526.350	526.350
6	522.350	523.150	527.500	526.750	532.900	530.225	533.500	532.700	528.000	527.525
7	525.150	525.950	535.250	527.250	534.500	536.775	535.000	533.500	528.500	527.975
8	530.250	531.050	536.500	531.500	538.975	540.900	536.225	533.900	531.900	531.800
9	530.675	531.475	543.750	537.250	544.775	545.500	541.500	542.300	535.075	535.400
10	532.750	533.550	547.750	547.500	546.975	549.300	550.300	546.775	542.700	536.275
11	534.625	535.425	548.250	550.750	550.100	550.500	557.100	549.900	543.425	540.975
12	543.475	544.275	550.750	554.500	561.500	556.500	560.975	560.225	552.550	547.975
13	544.700	545.500	552.500	562.500	565.300	556.900	562.775	560.975	553.725	551.225
14	547.325	548.125	561.750	563.500	565.700	568.025	568.225	568.225	565.425	551.950
15	548.775	549.575	567.500	569.250	568.025	570.975	570.775	570.775	566.025	552.950
16	549.700	550.500	571.250	571.750	572.500	572.900	572.000	572.700	568.125	557.250
17	553.450	554.250	574.750	572.250	574.100	573.700	572.700	573.100	571.675	558.400
18	556.275	557.075	575.750	575.750	576.025	576.025	574.300	574.300	572.150	558.800
19	561.050	561.850	577.250	576.500	577.500	577.500	576.975	576.975	573.675	561.800
20	562.600	563.400	577.750	577.750	520.775	518.100	520.975	520.975	576.650	568.375
21	564.700	565.500	520.500	528.500	534.100	525.300	525.100	528.225	536.075	525.650
22	571.450	572.250	521.750	529.250	538.225	528.775	536.975	540.700	556.975	553.600
23	574.450	575.250	530.500	530.500	540.900	533.300	540.000	544.225	560.575	567.575
24	575.300	576.100	531.250	538.500	541.700	533.700	542.300	550.300	519.125	523.575
25	575.700	576.500	534.750	540.250	546.225	546.225	556.000	556.000	521.700	533.050
26	576.650	577.450	537.250	543.750	549.700	549.700	556.700	556.700	539.550	556.700
27	577.150	577.950	540.250	544.500	552.025	552.025	557.900	557.100	554.600	566.125
28	523.850	524.650	546.500	545.750	560.775	554.975	566.300	557.900	558.050	572.000
29	548.300	549.100	551.500	551.500	564.500	565.700	575.000	562.775	539.025	518.050
30	572.750	573.550	554.500	552.500	566.500	568.775	576.225	566.300	540.725	536.675
31	529.350	530.150	555.500	556.250	573.700	572.500			545.100	538.375
32	533.950	534.750	560.500	558.750					556.125	571.175
33	537.925	538.725	563.500	559.750					557.400	573.100
34	561.950	562.750	564.250	567.500					570.000	575.250
35	565.525	566.325	569.250	568.500						
36	566.575	567.375	570.500	569.750						
37	570.775	571.575								
38	535.750	536.550								
39	551.700	552.500								
40	569.425	570.225								

## J5E FREQUENCY BAND (578.000 - 638.000 MHz)

Channel	Full Range max. # of comp. frequencies (option 1)	Full Range max. # of comp. frequencies (option 2)	France preferred: User Group A (option 1)	France preferred: User Group A (option 2)	France preferred: User Group B (option 1)	France preferred: User Group B (option 2)	France preferred: User Group C (option 1)	France preferred: User Group C (option 2)	All Bands	All Bands
	Group 1	Group 2	Group 3	Group 4	Group 5	Group 6	Group 7	Group 8	Group 9	Group 10
1	578.375	578.375	578.500	578.500	578.225	578.225	578.775	580.000	589.375	581.050
2	579.400	579.100	579.250	579.250	578.975	578.975	580.000	580.700	590.525	582.400
3	581.750	580.175	579.750	582.750	580.900	580.900	582.300	581.100	591.175	583.950
4	582.625	583.125	583.250	583.250	582.500	581.300	583.000	581.900	595.300	584.950
5	584.675	583.625	585.750	585.750	585.500	582.500	584.975	584.975	596.350	585.700
6	587.350	584.825	587.500	591.750	593.500	586.975	589.100	591.000	600.375	589.250
7	588.825	585.800	593.250	593.250	594.975	592.025	592.225	594.775	601.875	589.900
8	589.225	587.350	595.500	595.500	597.300	598.500	597.100	597.500	602.825	591.125
9	594.200	593.475	598.750	604.250	604.900	606.100	597.900	605.900	604.925	593.350
10	594.725	595.400	610.500	607.500	605.700	608.775	605.500	606.300	605.700	599.100
11	596.975	596.750	611.250	608.500	606.100	609.500	608.975	608.225	616.900	610.300
12	603.475	599.800	615.500	609.250	610.975	610.975	610.775	610.775	622.650	611.075
13	606.050	608.275	623.250	617.750	624.775	620.900	621.500	621.100	624.875	613.175
14	607.725	609.950	623.750	623.250	626.975	624.775	623.000	624.975	626.100	614.125
15	616.200	612.525	625.750	623.750	628.900	628.900	628.000	626.775	626.750	615.625
16	619.250	619.025	631.750	625.750	630.500	630.500	628.700	631.000	630.300	619.650
17	620.600	621.275	633.250	633.250	636.500	634.225	634.775	634.025	631.050	620.700
18	622.525	621.800	634.500	634.500	636.900	634.975	636.700	634.775	632.050	624.825
20	630.200	627.175	636.250	636.250	580.500	637.700	637.900	637.500	634.950	626.625
21	631.175	628.650	583.750	580.250	584.775	586.225	578.025	584.225	594.000	586.250
22	632.375	631.325	585.250	587.750	596.900	588.500	594.025	596.000	620.625	595.375
23	632.875	633.375	599.500	590.750	598.100	589.300	594.775	598.300	629.750	622.000
24	635.825	634.250	600.500	594.500	598.500	600.025	596.700	605.100	579.850	593.850
25	636.900	636.600	601.750	599.750	600.775	604.500	606.300	608.975	580.950	607.800
26	637.625	637.625	602.500	601.750	610.225	605.700	610.025	620.700	586.800	629.200
27	581.200	581.775	603.750	602.500	616.775	614.100	621.900	621.900	608.200	635.050
28	586.450	592.150	606.750	603.500	621.700	621.700	626.775	622.300	622.150	636.150
29	592.725	594.275	608.500	611.250	626.225	626.225	630.300	624.225	598.250	581.900
30	597.900	595.825	609.250	615.500	630.100	626.975	631.000	630.300	606.250	598.100
31	598.600	598.850	612.250	619.250	634.225	630.100			611.900	603.050
32	604.000	600.400	619.500	620.250	634.975	636.500			612.950	604.100
33	605.350	601.550	620.250	625.250					617.900	609.750
34	614.450	610.650	625.250	626.500					634.100	617.750
35	615.600	612.000	626.500	631.500						
36	617.150	617.400	633.750	632.500						
37	620.175	618.100								
38	621.725	623.275								
39	623.850	629.550								
40	634.225	634.800								

## K4E FREQUENCY BAND (606–666 MHz)

Channel	Group 1	Group 2	Group 3	Group 4	Group 5	Group 6	Group 7	Group 8	Group 9	Group 10	Group 11
	Full Range max. # of compatible frequencies 606 - 666 MHz (option 1)	Full Range max. # of compatible frequencies 606 - 666 MHz (option 2)	Full Range max. # of compatible frequencies 606 - 666 MHz (option 3)	Full Range excl. TV ch. 38, max. # of compatible frequencies, 614-666 MHz (option 1)	Full Range excl. TV ch. 38, max. # of compatible frequencies, 614-666 MHz (option 2)	U.K. preferred: TV ch. 38 606-614 MHz with 125 kHz guard band (option 1)	U.K. preferred: TV ch. 38 606-614 MHz with 125 kHz guard band (option 2)	U.K. preferred: TV ch. 38 606-614 MHz with 500 kHz guard band (option 3)	U.K. preferred: TV ch. 38 606-614 MHz with 500 kHz guard band (option 1)	U.K. preferred: TV ch. 38 606-614 MHz with 500 kHz guard band (option 2)	U.K. preferred: TV ch. 38 606-614 MHz with 500 kHz guard band (option 3)
1	606.825	606.375	606.675	615.600	614.475	606.175	607.000	606.275	606.825	607.000	606.625
2	607.375	606.750	607.225	616.125	614.925	608.050	607.350	606.875	607.250	607.625	607.675
3	608.300	607.550	609.500	617.325	615.550	609.125	608.400	607.800	607.975	608.975	608.525
4	610.125	609.500	609.950	617.725	617.475	609.525	608.850	608.200	608.900	609.500	610.175
5	612.525	610.475	611.100	620.050	619.675	611.775	610.875	610.925	610.350	610.750	610.625
6	613.900	611.825	612.875	620.775	622.075	612.600	611.625	611.725	611.175	612.250	611.575
7	616.200	614.850	614.250	622.075	622.425	613.100	612.175	613.350	612.525	612.975	612.175
8	620.125	616.675	619.600	625.725	631.700	613.825	613.825	613.850	613.150	613.400	613.375
9	622.975	620.525	620.550	631.225	632.425	606.775	613.175	610.475	611.550	611.775	607.275
10	623.625	621.175	623.175	633.050	633.750	607.550	606.475	612.050	608.350	606.550	611.275
11	624.700	627.200	628.700	634.550	638.125	611.200					
12	639.075	629.400	639.975	646.250	639.075						
13	641.600	633.025	641.450	650.825	647.500						
14	647.000	645.200	644.475	651.625	651.475						
15	647.450	648.700	645.725	652.150	653.675						
16	650.800	649.200	652.300	654.850	654.525						
17	652.200	650.050	653.025	655.750	656.475						
18	656.775	651.700	655.475	657.750	662.000						
19	658.575	655.475	659.125	661.225	662.525						
20	660.950	658.700	659.500	662.875	663.675						
21	661.725	660.725	661.375	664.975	664.350						
22	662.075	663.125	662.400	665.675	665.750						
23	663.000	664.600	662.975	614.200	621.300						
24	663.675	665.300	664.125	628.225	625.475						
25	610.950	608.025	607.575	633.500	635.625						
26	621.650	619.650	616.825	654.475	660.525						
27	622.000	637.075	618.350	659.175	661.000						
28	634.275	643.900	627.375	661.825	663.275						
29	648.325	651.150	643.400	622.600	615.875						
30	664.650	662.525	650.175	631.875	620.775						
31	665.825	663.450	664.975	632.225	626.400						
32	608.600	616.300	608.175	637.050	632.900						
33	611.425	617.525	616.425	637.475	634.775						
34	620.725	624.025	621.100	638.250	639.850						
35	626.175	627.825	624.500	638.550	648.250						
36	626.775	630.000	631.800	649.050	648.825						
37	628.050	630.800	633.175	652.950	652.225						
38	628.475	633.400	635.750	662.225	653.200						
39	629.100	634.125	637.425	664.100	657.200						
40	637.650	635.750	639.325								
41	640.250	646.075	646.325								
42	642.100	649.500	650.775								
43	644.650	655.775	656.425								
44	645.300	657.775	663.825								
45	657.850	664.125	665.475								

## K4E FREQUENCY BAND (606–666 MHz) Continued

Channel	Group 12	Group 13	Group 14	Group 15	Group 16	Group 17	Group 18	Group 19	Group 20
	France preferred: User Group A 614 - 666 MHz (option 1)	France preferred: User Group A 614 - 666 MHz (option 2)	France preferred: User Group A 614 - 666 MHz (option 3)	France preferred: User Group B 614 - 666 MHz (option 1)	France preferred: User Group B 614 - 666 MHz (option 2)	France preferred: User Group B 614 - 666 MHz (option 3)	France preferred: User Group C 614 - 666 MHz (option 1)	France preferred: User Group C 614 - 666 MHz (option 2)	France preferred: User Group C 614 - 666 MHz (option 3)
1	614.750	615.750	615.500	614.100	616.775	614.500	616.975	614.300	614.300
2	615.750	618.500	617.750	614.500	618.975	618.225	618.775	616.975	615.000
3	618.500	619.250	619.500	616.025	620.900	620.500	620.000	618.775	616.225
4	619.250	623.250	620.250	618.975	622.100	621.300	624.975	622.300	620.700
5	623.250	626.500	625.250	621.300	626.975	628.900	629.500	628.700	626.775
6	625.250	627.500	626.500	632.775	629.300	630.100	636.700	636.000	636.000
7	635.500	643.750	631.750	636.900	638.100	633.500	637.100	637.500	637.500
8	644.250	646.750	634.500	644.500	645.700	640.025	645.500	644.700	648.975
9	647.500	650.500	635.500	650.225	649.500	644.900	648.225	645.100	650.775
10	649.250	652.250	647.250	652.900	652.500	658.225	652.000	650.775	653.100
11	650.500	659.250	649.250	658.975	658.975	662.100	658.775	660.000	653.900
12	655.750	663.750	657.750	662.100	662.500	662.500	661.100	663.000	661.100
13	663.500	665.250	659.250	665.500	664.025	664.025	661.900	664.225	664.975
14	665.750	665.750	663.750	618.225	614.100	618.975	663.000	664.975	616.975
15	616.500	614.750	614.750	624.775	616.025	622.500	614.300	618.025	628.000
16	620.250	616.500	616.500	626.225	622.500	625.500	624.225	624.975	628.700
17	624.500	619.750	624.500	628.900	626.225	629.300	630.300	628.000	629.900
18	626.500	624.500	627.250	629.700	629.700	634.975	647.000	632.225	630.300
19	627.500	625.250	628.250	632.025	632.025	642.975	650.775	634.025	632.225
20	639.750	635.500	643.500	637.300	648.775	645.300	652.700	638.300	637.100
21	641.250	636.250	646.750	642.975	652.900	650.225	656.225	640.225	656.225
22	641.750	643.250	648.500	653.700	654.500	652.900	658.025	648.975	661.500
23	643.250	647.500	650.500	654.100	660.500	653.300	662.300	658.775	662.300
24	649.750	648.500	655.750	656.775	661.300	656.025			664.225
25	651.500	655.500	657.250	658.225	664.775	658.975			
26	654.750	656.500	660.250	660.900					
27	656.500	658.500	664.500	661.700					
28	658.500	659.750	665.750	664.025					
29	662.750								
30	664.500								

Channel	Group 21	Group 22	Group 23	Group 24	Group 25	Group 26
	European TV channel 39 optimized 614 - 622 MHz	European TV channel 40 optimized 622 - 630 MHz	European TV channel 41 optimized 630 - 638 MHz	European TV channel 42 optimized 638 - 646 MHz	European TV channel 43 optimized 646 - 654 MHz	European TV channel 44 optimized 654 - 660 MHz
1	614.125	622.125	630.125	638.125	646.125	654.125
2	614.725	622.725	630.725	638.725	646.725	654.725
3	615.900	623.900	631.900	639.900	647.900	655.900
4	617.400	625.400	633.400	641.400	649.400	657.400
5	618.400	626.400	634.400	642.400	650.400	658.400
6	619.775	627.775	635.775	643.775	651.775	659.775
7	620.500	628.500	636.500	644.500	652.500	660.500
8	621.400	629.400	637.400	645.400	653.400	661.400
9	621.775	629.775	637.775	645.775	653.775	661.775
10	615.575	623.575	631.575	639.575	647.575	655.575

## L3E FREQUENCY BAND (638.000 - 698.000 MHz)

Channel	Full Range max. # of comp. frequencies (option 1)	Full Range max. # of comp. frequencies (option 2)	France preferred: User Group A (option 1)	France preferred: User Group A (option 2)	France preferred: User Group B (option 1)	France preferred: User Group B (option 2)	France preferred: User Group C (option 1)	France preferred: User Group C (option 2)	All Bands	All Bands
	Group 1	Group 2	Group 3	Group 4	Group 5	Group 6	Group 7	Group 8	Group 9	Group 10
1	638.100	638.900	639.500	639.500	640.775	638.500	640.225	639.000	647.625	639.350
2	638.825	639.625	640.500	640.500	642.225	640.775	640.975	640.225	654.200	642.325
3	639.350	640.150	641.250	641.750	645.300	645.300	642.025	640.975	657.200	643.850
4	640.375	641.175	641.750	643.250	646.100	650.225	644.700	642.025	657.600	644.325
5	641.725	642.525	643.250	643.750	648.025	650.975	646.300	644.700	658.750	647.875
6	642.350	643.150	646.750	647.250	650.975	652.900	653.100	652.700	663.050	649.975
7	645.150	645.950	651.500	655.500	660.500	654.100	653.500	653.100	664.050	650.575
8	650.250	651.050	655.500	657.250	660.900	654.500	656.975	660.000	664.775	662.275
9	650.675	651.475	667.250	665.750	662.100	658.225	661.100	662.300	668.025	663.450
10	652.750	653.550	672.500	671.750	668.500	670.500	666.025	668.700	675.025	672.575
11	654.625	655.425	673.750	672.500	672.775	678.100	666.775	669.500	679.725	673.300
12	663.475	664.275	679.250	675.250	680.025	680.775	680.225	680.975	680.600	680.925
13	664.700	665.500	679.750	676.250	681.500	682.975	682.025	685.900	684.200	684.100
14	667.325	668.125	681.250	682.500	690.975	684.900	685.500	687.000	688.025	687.500
15	668.775	669.575	683.750	684.250	692.900	686.500	688.225	692.700	688.475	688.000
16	669.700	670.500	687.500	687.500	694.100	692.900	692.000	693.900	689.650	689.650
17	673.450	674.250	692.250	691.750	694.500	693.700	692.700	694.300	693.700	691.500
18	676.275	677.075	695.500	695.750	696.775	696.025	693.100	696.225	694.250	692.325
19	681.050	681.850	696.500	697.250	697.500	697.500	693.900	696.975	695.700	693.750
20	682.600	683.400	697.250	697.750	638.100	638.100	696.975	650.775	697.425	697.500
21	684.700	685.500	638.750	641.250	648.775	644.900	652.000	656.225	648.425	655.425
22	691.450	692.250	647.250	647.750	650.225	648.775	658.025	663.000	662.400	659.025
23	694.450	695.250	649.250	648.500	661.700	657.500	658.775	664.975	690.350	679.925
24	695.300	696.100	649.750	657.750	666.225	666.975	668.000	672.225	644.000	657.950
25	695.700	696.500	650.500	658.500	666.975	669.300	680.975	682.775	649.875	661.400
26	696.650	697.450	660.250	662.750	669.300	670.100	684.700	685.100	659.300	676.450
27	697.150	697.950	662.750	663.500	669.700	672.775	685.900	686.300	682.950	694.300
28	643.850	644.650	664.500	665.250	682.225	684.500			692.425	696.875
29	668.300	669.100	666.500	667.500	685.700	692.500			640.750	646.000
30	692.750	693.550	671.500	671.250	686.100	694.100			642.900	658.600
31	649.350	650.150	674.500	674.500					644.825	659.875
32	653.950	654.750	684.250	688.500					677.625	670.900
33	657.925	658.725	689.750	689.250					679.325	675.275
34	681.950	682.750	691.750	691.250					697.950	676.975
35	685.525	686.325	697.750	695.250						
36	686.575	687.375								
37	690.775	691.575								
38	655.750	656.550								
39	671.700	672.500								
40	689.425	690.225								

## M5E FREQUENCY BAND (694–758 MHz)

Channel	Group 1	Group 2	Group 3	Group 4	Group 5	Group 6	Group 7	Group 8	Group 9	Group 10
	Full Range max. # of compatible frequencies 694 - 758 MHz (option 1)	Full Range max. # of compatible frequencies 694 - 758 MHz (option 2)	Full Range max. # of compatible frequencies 694 - 758 MHz (option 3)	Full Range max. # of compatible frequencies 694 - 758 MHz (option 4)	France preferred: User Group A 694 - 758 MHz (option 1)	France preferred: User Group A 694 - 758 MHz (option 2)	France preferred: User Group A 694 - 758 MHz (option 3)	France preferred: User Group B 694 - 758 MHz (option 1)	France preferred: User Group B 694 - 758 MHz (option 2)	France preferred: User Group B 694 - 758 MHz (option 3)
1	694.400	694.950	698.025	694.350	694.750	697.250	695.500	696.025	697.500	696.025
2	695.175	696.000	699.375	695.075	699.250	698.500	702.750	696.775	701.700	698.225
3	696.400	698.625	701.125	695.550	704.500	699.500	704.500	698.225	702.500	700.900
4	696.925	700.825	702.225	696.575	707.250	708.250	707.750	705.500	706.975	705.500
5	699.025	702.775	703.075	700.275	715.500	713.250	716.250	720.025	722.975	708.500
6	700.550	703.575	705.450	701.675	716.250	719.500	721.750	722.975	724.500	708.900
7	703.425	707.375	707.575	703.800	722.500	727.500	722.500	725.300	734.500	714.225
8	704.500	708.825	714.625	707.025	728.500	735.250	723.750	732.900	738.225	718.100
9	708.225	710.900	718.650	708.700	735.750	737.750	739.500	738.975	740.900	729.500
10	711.375	717.350	720.500	709.600	737.250	739.250	743.750	740.900	746.975	734.500
11	715.625	719.200	721.175	711.625	747.750	739.750	746.500	742.100	748.900	736.025
12	717.050	720.400	722.150	715.050	750.750	744.500	747.500	745.500	749.300	740.500
13	727.050	720.750	729.925	729.275	751.250	745.250	753.250	750.500	752.775	754.975
14	730.500	722.050	735.550	733.100	753.250	748.250	755.750	757.300	698.225	757.300
15	731.125	734.725	735.925	734.425	754.500	751.750	756.250	701.300	700.500	697.500
16	740.875	739.825	740.700	734.900	755.500	694.750	694.750	702.500	701.300	709.700
17	741.750	740.875	744.850	741.675	695.500	695.500	696.500	704.775	704.025	716.500
18	746.675	745.375	747.850	744.600	696.500	696.500	699.500	710.500	708.900	728.775
19	748.725	748.525	751.700	746.075	698.500	697.750	711.500	712.025	709.300	734.100
20	749.150	751.875	752.425	747.025	700.250	700.250	713.750	716.500	710.100	738.975
21	750.375	752.650	753.375	748.225	702.750	706.500	714.500	716.900	712.025	741.300
22	753.550	753.900	753.950	750.950	703.500	707.750	715.500	718.100	730.225	741.700
23	755.400	754.250	754.800	751.575	711.250	711.250	720.500	726.100	733.300	744.025
24	755.925	755.650	755.275	753.475	719.500	713.750	727.750	730.225	733.700	749.700
25	756.900	757.850	757.425	755.100	720.500	715.500	732.250	733.300	740.500	754.225
26	699.625	695.325	694.275	697.000	721.750	722.500	740.250	736.025	742.500	756.900
27	714.775	699.975	695.300	697.825	730.500	728.500	743.250	746.975	750.100	
28	717.775	726.375	695.975	713.975	731.500	730.500	745.250	753.500	754.225	
29	721.050	735.600	706.025	722.450	739.500	732.250	745.750	754.225	754.975	
30	728.550	740.225	709.375	730.425	740.250	734.750	751.500	756.900		
31	743.650	743.475	730.825	737.900	742.750	742.750	752.500			
32	747.450	746.550	755.950	756.525	747.250	747.500	753.750			
33	698.175	697.800	697.100	699.250	756.250	752.500				
34	702.675	705.175	704.700	699.850						
35	705.300	706.525	715.375	707.975						
36	707.525	709.775	716.300	716.500						
37	713.275	713.375	723.450	717.300						
38	718.825	713.725	726.775	717.750						
39	720.300	718.425	727.425	720.200						
40	725.275	722.575	729.400	721.825						
41	727.525	725.250	733.275	727.950						
42	732.175	728.925	733.950	728.950						
43	734.550	734.075	736.900	732.225						
44	735.475	736.000	741.500	733.675						
45	736.625	737.625	742.650	749.200						
46	740.225	742.450	743.500	753.125						
47	754.325	743.825	746.775	754.475						
48	756.275	756.375	750.275	757.550						

## M5E FREQUENCY BAND (694–758 MHz) Continued

	<b>Group 11</b>	<b>Group 12</b>	<b>Group 13</b>	<b>Group 14</b>	<b>Group 15</b>	<b>Group 16</b>	<b>Group 17</b>	<b>Group 18</b>	<b>Group 19</b>
<b>Channel</b>	France preferred: User Group C 694 - 758 MHz (option 1)	France preferred: User Group C 694 - 758 MHz (option 2)	France preferred: User Group C 694 - 758 MHz (option 3)	European TV channel 49 optimized 694 - 702 MHz	European TV channel 50 optimized 702 - 710 MHz	European TV channel 51 optimized 710 - 718 MHz	European TV channel 52 optimized 718 - 726 MHz	European TV channel 53 optimized 726 - 734 MHz	European TV channel 54 optimized 734 - 742 MHz
<b>1</b>	694.300	698.025	694.300	694.350	702.350	710.350	718.350	726.350	734.350
<b>2</b>	695.000	700.700	701.900	694.700	702.700	710.700	718.700	726.700	734.700
<b>3</b>	712.975	703.000	706.025	695.375	703.375	711.375	719.375	727.375	735.375
<b>4</b>	714.775	704.975	708.000	696.700	704.700	712.700	720.700	728.700	736.700
<b>5</b>	719.000	709.500	711.000	697.175	705.175	713.175	721.175	729.175	737.175
<b>6</b>	722.775	710.300	712.225	698.400	706.400	714.400	722.400	730.400	738.400
<b>7</b>	724.700	728.225	727.000	699.825	707.825	715.825	723.825	731.825	739.825
<b>8</b>	725.900	732.000	732.700	700.600	708.600	716.600	724.600	732.600	740.600
<b>9</b>	736.225	733.100	733.500	701.725	709.725	717.725	725.725	733.725	741.725
<b>10</b>	741.100	740.700	738.025	701.050	709.050	717.050	725.050	733.050	741.050
<b>11</b>	744.975	742.300	746.775						
<b>12</b>	749.500	754.025	749.900						
<b>13</b>	750.300	757.100	750.300						
<b>14</b>	757.100	757.500	756.700						
<b>15</b>	698.025	695.000	696.225						
<b>16</b>	704.225	696.225	698.775						
<b>17</b>	706.025	698.775	700.000						
<b>18</b>	708.000	706.025	700.700						
<b>19</b>	708.700	714.775	702.300						
<b>20</b>	711.000	722.025	712.975						
<b>21</b>	717.500	732.700	714.775						
<b>22</b>	733.100	735.000	720.975						
<b>23</b>	742.300	736.225	724.700						
<b>24</b>	744.225	738.775	735.000						
<b>25</b>	746.775	740.000	736.225						
<b>25</b>	748.000	752.225	744.975						
<b>27</b>	752.975	752.975	751.000						
<b>28</b>	756.000	754.775							

<b>Channel</b>	<b>Group 20</b>	<b>Group 21</b>	<b>Group 22</b>	<b>Group 23</b>	<b>Group 24</b>
	European TV channel 55 optimized 742 - 750 MHz	European TV channel 56 optimized 750 - 758 MHz	Combined UHF-R M5E, -Q5 and -R9: max. # of compatible frequencies (option 1)	Combined UHF-R M5E, -Q5 and -R9: max. # of compatible frequencies (option 2)	Belgium preferred: "VRT" TV ch. 51+ 54 710 - 718 MHz + 734 - 742 MHz
<b>1</b>	742.350	750.350	694.400	694.675	710.825
<b>2</b>	742.700	750.700	695.450	695.775	711.525
<b>3</b>	743.375	751.375	695.875	696.300	712.675
<b>4</b>	744.700	752.700	697.150	697.225	715.650
<b>5</b>	745.175	753.175	697.550	698.975	716.125
<b>6</b>	746.400	754.400	698.600	699.350	717.025
<b>7</b>	747.825	755.825	699.425	700.900	717.400
<b>8</b>	748.600	756.600	701.500	701.225	735.175
<b>9</b>	749.725	757.725	702.025	701.950	737.175
<b>10</b>	749.050	757.050	702.350	703.700	737.775
<b>11</b>			703.775	704.225	738.825
<b>12</b>			704.800	706.875	740.950
<b>13</b>			706.300	708.700	741.650
<b>14</b>			711.500	710.900	713.100
<b>15</b>			713.450	713.475	734.850
<b>16</b>			714.700	713.950	735.700
<b>17</b>			716.425	715.200	711.850
<b>18</b>			718.700	715.750	716.425
<b>19</b>			719.000	716.750	738.150
<b>20</b>			719.750	717.275	740.075
<b>21</b>			720.050	721.475	
<b>22</b>			722.275	722.225	
<b>23</b>			724.275	723.900	
<b>24</b>			725.125	727.450	
<b>25</b>			726.875	730.700	
<b>26</b>			727.250	731.375	
<b>27</b>			728.300	731.800	
<b>28</b>			729.050	734.650	
<b>29</b>			732.525	735.525	
<b>30</b>			733.275	736.600	
<b>31</b>			737.150	737.225	
<b>32</b>			738.750		

## P8 FREQUENCY BAND (710–790 MHz)

	Group 1	Group 2	Group 3	Group 4	Group 5	Group 6	Group 7	Group 8	Group 9	Group 10	Group 11	Group 12	Group 13
Channel	"Full Range max. # of compatible frequencies 710 - 790 MHz (option 1)"	"Full Range max. # of compatible frequencies 710 - 790 MHz (option 2)"	"Full Range max. # of compatible frequencies 710 - 790 MHz (option 3)"	"Full Range max. # of compatible frequencies 710 - 790 MHz (option 4)"	"France preferred: User Group A (option 1) 710 - 790 MHz"	"France preferred: User Group A (option 2) 710 - 790 MHz"	"France preferred: User Group A (option 3) 710 - 790 MHz"	"France preferred: User Group B (option 1) 710 - 790 MHz"	"France preferred: User Group B (option 2) 710 - 790 MHz"	"France preferred: User Group B (option 3) 710 - 790 MHz"	"France preferred: User Group C (option 1) 710 - 790 MHz"	"France preferred: User Group C (option 2) 710 - 790 MHz"	"France preferred: User Group C (option 3) 710 - 790 MHz"
1	710.450	710.425	710.800	710.125	710.750	710.750	710.750	712.025	710.500	712.025	710.300	711.000	710.300
2	710.950	711.025	711.475	710.800	711.500	711.250	711.750	712.775	712.775	714.225	711.000	712.225	712.225
3	711.825	712.100	711.975	711.925	712.500	713.250	713.250	714.975	713.500	714.975	712.225	712.975	712.975
4	712.150	712.975	712.950	712.300	713.750	714.500	714.500	716.500	716.900	716.900	712.975	714.025	714.775
5	713.025	713.450	714.250	713.550	714.500	715.500	714.500	716.900	718.100	717.300	716.700	714.775	716.000
6	714.825	714.325	715.975	714.150	715.500	716.250	715.500	717.700	720.025	718.100	720.225	717.900	717.900
7	715.775	716.200	716.800	714.975	716.250	718.750	716.250	720.025	722.225	720.025	722.025	718.300	718.300
8	716.375	716.925	717.225	715.600	719.250	719.500	719.500	725.700	722.975	720.775	722.775	720.225	720.225
9	717.250	717.425	717.950	716.575	719.750	720.500	721.250	726.100	724.900	722.225	725.100	725.100	724.000
10	718.300	719.150	719.750	717.275	721.250	722.500	722.500	728.775	725.300	724.900	725.900	725.900	724.700
11	719.975	719.725	723.175	720.225	726.750	723.250	724.250	730.225	726.100	725.300	726.300	727.000	725.100
12	720.400	721.100	724.175	720.675	729.250	723.750	726.750	730.975	728.025	728.775	727.000	730.775	725.900
13	721.275	725.725	725.525	721.450	729.750	727.500	727.750	732.900	728.775	730.975	730.775	732.700	728.975
14	721.975	726.750	726.075	721.925	730.500	728.500	729.750	734.100	730.225	734.100	734.300	733.100	730.775
15	722.900	727.600	727.350	722.850	731.500	729.250	731.500	736.025	738.975	734.500	736.225	734.300	736.225
16	723.375	728.150	729.750	723.425	734.750	732.250	735.500	736.775	740.900	736.025	736.975	735.000	738.025
17	726.525	729.800	731.900	725.200	735.750	735.750	736.500	738.225	741.300	738.225	740.000	738.025	738.775
18	734.150	730.925	732.850	725.950	736.500	737.250	737.750	741.300	742.100	740.900	740.700	738.775	740.700
19	735.150	732.600	734.700	734.075	737.750	737.750	738.500	748.900	744.025	741.700	741.100	740.000	741.100
20	737.050	733.225	737.175	734.375	738.500	738.500	739.750	749.300	744.775	744.775	741.900	740.700	741.900
21	737.650	733.525	739.125	735.600	739.500	742.750	742.750	750.100	746.225	746.975	749.900	742.300	742.300
22	738.025	734.900	741.300	735.900	743.500	743.500	743.750	752.025	746.975	752.025	750.300	746.025	749.500
23	738.600	735.725	741.725	737.925	745.250	744.500	744.500	752.775	748.900	752.775	752.225	748.000	751.000
24	739.375	736.850	742.700	738.850	748.250	746.500	747.500	754.225	749.700	754.225	754.775	751.000	752.225
25	739.775	741.950	745.050	739.600	750.750	747.250	750.750	754.975	750.100	756.900	757.100	752.225	754.025
26	740.350	744.425	746.050	740.675	751.750	750.750	753.250	756.900	754.225	757.300	758.300	754.775	754.775
27	742.850	746.425	747.225	741.100	752.500	751.500	754.500	758.100	757.700	758.100	760.225	756.700	756.000
28	743.350	747.400	747.650	744.075	753.750	752.500	755.500	762.225	760.775	760.025	760.975	759.000	759.000
29	752.850	749.175	749.025	748.775	754.500	753.750	756.250	762.975	762.975	764.900	762.775	760.225	762.775
30	753.200	749.900	750.000	749.725	759.500	755.500	760.500	765.300	766.100	765.300	765.100	760.975	768.225
31	753.975	751.650	751.325	750.450	760.500	756.250	761.250	765.700	768.025	766.100	765.900	764.000	768.975
32	755.900	752.675	752.175	750.975	761.250	759.250	762.500	768.025	768.775	766.500	767.000	764.700	770.025
33	756.375	754.525	753.325	751.700	762.500	759.750	763.250	768.775	770.225	768.775	772.700	766.300	772.000
34	757.125	755.000	754.175	752.750	763.500	761.250	764.250	772.900	770.975	778.225	774.300	770.775	772.700
35	757.500	756.625	755.700	754.250	764.250	762.500	766.750	774.100	772.900	778.975	775.000	772.000	774.300
36	759.275	757.675	757.900	754.800	766.750	763.500	768.500	776.025	780.500	780.900	776.225	773.900	778.025
37	760.100	758.525	758.525	755.575	767.750	766.750	769.750	778.225	780.900	781.300	778.775	775.000	778.775
38	760.500	759.575	760.375	756.125	769.750	769.250	771.250	778.975	781.700	782.100	780.000	778.775	780.000
39	761.975	761.825	761.825	757.275	775.750	769.750	774.750	780.900	782.100	782.500	780.700	781.100	780.700
40	763.250	762.250	764.650	757.700	776.500	770.500	775.500	781.700	784.025	786.225	781.900	781.900	782.300
41	764.075	763.175	766.050	767.325	778.500	774.750	777.750	782.100	786.975	786.975	782.300	784.225	783.000
42	768.425	768.450	768.750	767.750	779.500	775.250	778.500	784.775	788.500	788.500	786.025	788.000	784.225
43	769.725	770.450	769.150	768.850	780.250	777.750	779.500	785.500	789.300	788.900	788.000	789.100	786.775
44	770.300	771.525	770.575	769.775	782.750	779.500	780.250	786.975	789.700	789.700	789.100	789.500	789.100
45	771.575	773.100	771.125	771.100	783.500	783.500	783.250	789.700					
46	771.975	773.450	772.650	771.625	784.500	784.500	783.750						
47	773.950	774.400	774.375	772.650	785.750	785.250	784.500						
48	775.125	774.900	775.425	773.025	786.500	786.500	786.500						
49	775.750	776.050	776.950	773.975	787.750	787.250	787.500						
50	777.050	776.875	777.300	775.725	788.250	788.250	788.250						
51	778.000	777.500	781.075	780.950									
52	782.875	777.950	781.475	782.275									
53	783.275	784.200	782.450	782.900									
54	784.200	784.875	783.150	783.200									
55	784.850	785.925	783.650	783.875									
56	787.200	786.375	784.475	785.125									
57	787.975	787.250	786.975	785.950									
58	788.375	788.350	787.300	787.700									
59	788.975	788.925	788.175	788.225									
60	789.275	789.250	788.800	788.525									

## P8 FREQUENCY BAND (710–790 MHz) Continued

	Group 14	Group 15	Group 16	Group 17	Group 18	Group 19	Group 20	Group 21	Group 22	Group 23	Group 24	Group 25	Group 26
Channel	"Germany preferred: Full Range w/o TV Ch. 52 710 - 718 MHz + 726 - 790 MHz"	"Germany preferred: Full Range w/o TV Ch. 53 710 - 726 MHz + 734 - 790 MHz"	"Germany preferred: Full Range w/o TV Ch. 54 710 - 734 MHz + 742 - 790 MHz"	"Germany preferred: Full Range w/o TV Ch. 55 710 - 742 MHz + 750 - 790 MHz"	"Germany preferred: Full Range w/o TV Ch. 56 710 - 750 MHz + 758 - 790 MHz"	"Germany preferred: Full Range w/o TV Ch. 58 710 - 758 MHz + 766 - 790 MHz"	"Germany preferred: Full Range w/o TV Ch. 59 710 - 766 MHz + 774 - 790 MHz"	"Germany preferred: Full Range w/o TV Ch. 59 710 - 774 MHz + 782 - 790 MHz"	"Germany preferred: Full Range w/o TV Ch. 60 710 - 782 MHz + 790 - 790 MHz"	"Germany preferred: Full Range w/o TV Ch. 53, 57 710 - 726 MHz + 734 - 758 MHz + 766 - 790 MHz"	"Germany preferred: Full Range w/o TV Ch. 56, 59 710 - 750 MHz + 758 - 774 MHz + 782 - 790 MHz"	"Germany preferred: Full Range w/o TV Ch. 55, 57 710 - 718 MHz + 726 - 742 MHz + 750 - 782 MHz"	"Germany preferred: Full Range w/o TV Ch. 52, 55, 60 710 - 718 MHz + 726 - 742 MHz + 750 - 782 MHz"
1	710.200	710.200	710.350	710.350	710.575	710.275	710.600	710.200	710.750	710.675	710.225	710.425	710.375
2	710.700	710.575	710.725	711.700	711.425	710.900	711.775	711.125	711.275	712.075	710.600	710.875	710.800
3	711.400	711.975	711.450	713.250	712.075	711.950	712.200	711.725	712.000	713.275	711.325	711.650	711.550
4	711.725	712.475	711.975	713.700	712.450	712.750	713.375	712.500	713.550	714.650	711.875	712.675	712.125
5	712.275	713.200	714.575	714.625	713.175	713.925	714.175	713.625	714.300	715.225	712.225	713.100	712.525
6	714.900	713.575	715.275	715.000	714.725	714.375	715.300	714.325	715.500	715.625	712.750	714.225	713.200
7	715.450	714.125	715.625	716.500	716.775	715.725	716.875	716.350	718.100	716.350	715.100	715.550	714.050
8	715.825	715.600	716.475	717.275	717.775	716.400	717.575	718.800	718.425	716.900	715.800	716.075	715.275
9	716.475	716.000	717.000	718.675	718.600	718.175	719.250	719.425	718.800	716.300	717.050	716.250	
10	717.325	720.200	717.900	720.325	720.150	721.350	720.175	720.375	721.075	719.950	716.975	717.400	717.000
11	717.850	721.175	722.950	721.125	720.625	721.700	721.375	720.775	721.725	720.250	723.025	726.925	717.525
12	727.975	721.975	724.900	723.825	721.275	722.225	722.150	723.100	723.475	720.900	724.175	727.675	726.175
13	728.750	722.450	725.750	724.400	725.300	722.925	723.925	723.525	724.450	722.200	724.850	728.125	727.050
14	729.225	723.175	726.350	725.475	726.275	723.850	724.775	724.200	726.950	722.650	726.175	728.800	727.525
15	729.900	723.550	727.175	729.575	727.550	724.950	725.350	724.700	727.475	723.300	727.075	729.650	728.225
16	730.250	724.150	727.475	730.925	728.625	726.525	728.375	726.050	728.350	723.775	728.425	730.300	730.050
17	730.775	725.350	728.200	731.325	731.575	727.250	728.800	726.950	731.075	734.850	728.850	731.450	730.450
18	733.100	725.650	730.450	732.075	732.225	729.775	729.950	729.400	731.650	735.900	729.525	732.125	731.175
19	734.175	734.925	730.975	732.475	733.275	734.350	730.750	732.275	732.000	736.475	730.450	735.800	731.500
20	734.725	736.075	732.200	733.425	733.575	735.150	731.775	736.375	733.625	737.275	731.725	737.100	732.075
21	737.275	736.875	732.525	736.125	734.150	738.475	733.425	736.725	734.050	738.300	732.300	737.500	734.500
22	737.825	738.600	733.025	736.575	735.275	739.125	734.025	737.325	737.300	739.025	734.375	738.125	735.050
23	738.950	739.150	742.700	738.450	742.350	739.950	737.075	738.750	737.875	740.300	741.375	740.725	736.375
24	741.750	739.950	743.325	739.000	743.525	740.350	740.300	739.550	740.100	740.975	742.025	741.075	737.275
25	742.375	740.950	744.525	739.300	744.075	741.975	745.050	742.000	743.175	741.300	743.025	741.700	739.250
26	744.075	741.650	744.850	739.975	744.925	742.775	746.275	743.050	744.300	741.950	743.550	750.200	740.500
27	748.450	742.550	745.525	750.850	745.575	744.525	746.925	745.050	745.950	743.875	745.250	750.500	740.950
28	748.950	745.325	748.050	752.025	746.500	746.750	747.825	746.250	747.950	749.725	746.075	750.975	751.275
29	751.200	748.650	748.700	752.900	746.800	747.650	748.125	748.275	749.475	750.200	746.550	752.125	752.025
30	751.900	749.450	749.100	753.525	748.425	748.275	749.600	752.125	750.250	750.925	747.225	754.525	752.550
31	752.300	749.950	749.975	753.975	749.175	751.700	750.900	754.325	750.550	752.500	748.100	755.050	753.475
32	753.075	751.050	750.325	754.775	749.750	752.225	752.550	754.750	752.125	753.275	748.775	755.400	754.225
33	755.925	751.725	752.200	755.325	758.600	752.925	753.250	755.350	753.400	753.575	749.850	756.450	755.350
34	756.375	752.850	758.475	756.875	759.025	756.000	755.775	756.750	755.475	754.975	758.525	756.750	756.975
35	757.000	753.250	759.275	758.175	759.975	756.425	756.300	757.575	755.975	755.850	758.950	757.325	757.850
36	759.325	754.275	761.450	759.200	760.425	757.150	757.475	759.500	757.100	757.200	759.750	757.675	758.425
37	760.275	754.975	762.300	760.025	761.100	766.450	757.850	761.025	759.050	757.700	761.275	766.525	760.050
38	761.875	756.075	763.350	760.500	762.025	766.950	759.750	762.000	759.575	766.625	763.075	767.175	760.875
39	765.275	757.675	764.075	761.225	762.425	767.250	760.400	764.850	761.875	767.200	764.300	767.525	762.425
40	766.175	758.425	765.050	762.125	763.425	767.750	761.225	765.850	762.825	767.525	764.700	768.325	766.800
41	766.525	761.475	765.650	768.650	765.275	768.725	762.225	766.200	763.375	768.725	766.575	769.825	767.275
42	768.475	766.375	767.625	769.850	766.675	769.275	764.225	767.050	765.350	769.025	766.950	770.375	768.550
43	768.975	767.700	770.025	772.425	767.650	771.800	774.150	768.075	766.825	771.700	767.850	771.575	770.050
44	770.950	769.275	771.425	773.775	773.750	772.525	774.675	769.475	769.350	772.200	769.425	771.950	770.875
45	772.275	771.050	773.250	774.150	775.500	773.075	775.475	771.100	770.550	772.875	770.275	773.875	771.950
46	773.250	771.525	774.100	774.725	776.050	773.425	776.625	771.600	772.550	773.225	771.700	774.625	772.500
47	774.425	772.475	775.500	775.500	777.625	774.075	777.525	772.375	772.950	773.750	772.450	775.150	774.300
48	774.825	774.100	776.300	776.475	778.750	774.550	779.350	773.375	773.900	780.650	772.950	781.550	775.925
49	779.025	774.775	777.550	779.375	779.450	775.450	780.200	773.900	775.550	781.225	773.800	782.325	777.275
50	779.525	776.225	779.075	780.050	780.475	780.675	780.675	782.425	776.050	782.075	782.450	783.975	777.925
51	781.800	777.500	779.775	782.025	781.800	782.475	781.375	783.300	776.375	782.400	783.075	784.950	779.025
52	782.925	782.975	780.100	782.925	782.675	782.825	781.700	783.925	777.500	783.125	784.900	785.425	779.625
53	783.825	783.775	782.200	783.450	784.675	783.375	782.350	784.975	777.900	784.625	785.350	786.175	780.525
54	785.300	785.150	785.625	786.675	786.375	784.650	784.325	786.325	780.000	785.375	786.525	786.675	781.150
55	786.025	785.475	787.175	787.225	787.025	785.350	786.475	786.950	780.775	785.775	787.075	788.125	
56	786.500	786.975	787.925	788.075	787.375	785.700	787.450	787.350	781.300	786.350	787.900	788.700	
57	787.425	787.775	788.300	788.725	787.900	787.000	787.750	788.150		786.675	788.550	789.025	
58	789.375	788.150	789.250	789.100	789.075	787.650	788.250	788.550		788.900	789.025	789.750	
59	789.775	788.975	789.775	789.725	789.650	789.100	789.525	789.175		789.825	789.725		
60		789.500				789.775	789.825	789.525					

## P8 FREQUENCY BAND (710–790 MHz) Continued

Channel	Group 27	Group 28	Group 29	Group 30	Group 31	Group 32	Group 33	Group 34	Group 35	Group 36	Group 37
	"Netherlands preferred: TV Ch. 51, 53, 59 (option 1) 710 - 718 MHz + 726 - 734 MHz + 774 - 782 MHz"	"Netherlands preferred: VRT TV Ch. 51, 54 (option 2) 710 - 718 MHz + 726 - 734 MHz + 774 - 782 MHz"	"Belgium preferred: VRT TV Ch. 51, 54 (option 1) 710 - 718 MHz + 734 - 742 MHz"	"Belgium preferred: VRT TV Ch. 51, 54 (option 2) 710 - 718 MHz + 734 - 742 MHz"	"Belgium preferred: VRT TV Ch. 52, 53 (option 1) 718 - 734 MHz"	"Belgium preferred: BRF TV Ch. 52, 53 (option 2) 718 - 734 MHz"	"Belgium preferred: BRF TV Ch. 52, 53 (option 1) 718 - 734 MHz"	"Belgium preferred: Licensed Use TV Ch. 59, 60 (option 1) 774 - 790 MHz"	"Belgium preferred: Licensed Use TV Ch. 59, 60 (option 2) 774 - 790 MHz"	"European TV channel 51 optimized 710 - 718 MHz"	"European TV channel 52 optimized 718 - 726 MHz"
1	710.450	710.450	710.125	710.325	718.300	718.225	774.400	775.025	710.150	718.150	726.150
2	710.975	711.100	711.200	710.675	719.700	718.800	774.700	775.400	710.525	718.525	726.525
3	711.275	711.500	711.975	711.375	720.150	719.575	775.400	776.275	711.100	719.100	727.100
4	712.400	712.300	712.475	711.725	720.875	719.950	775.875	776.700	711.475	719.475	727.475
5	712.750	712.875	713.200	712.250	721.400	720.725	776.600	777.800	712.225	720.225	728.225
6	713.300	713.800	713.550	712.950	722.225	721.325	777.600	778.550	714.100	722.100	730.100
7	714.725	714.950	714.125	713.300	722.850	722.375	777.975	779.125	714.850	722.850	730.850
8	715.800	715.725	715.525	715.750	723.750	723.625	779.000	779.950	715.225	723.225	731.225
9	716.350	716.325	716.100	716.450	724.125	724.200	779.525	781.175	715.800	723.800	731.800
10	717.275	716.675	716.500	716.900	725.075	725.475	783.825	783.450	716.175	724.175	732.175
11	717.800	717.375	717.300	717.525	725.750	727.850	784.875	784.075	716.925	724.925	732.925
12	726.275	717.875	717.675	717.850	727.100	728.175	785.375	785.100	717.300	725.300	733.300
13	727.075	726.125	734.250	734.275	729.550	729.400	785.675	785.400	717.875	725.875	733.875
14	727.675	726.675	734.650	734.875	730.275	729.800	786.175	785.900			
15	728.100	727.050	735.250	735.900	731.175	730.400	787.150	787.150			
16	728.875	727.700	735.650	736.675	731.600	731.175	787.925	787.975			
17	729.350	728.150	736.425	737.100	732.275	732.325	788.325	788.575			
18	730.250	730.575	736.825	737.800	732.625	733.150	789.175	789.375			
19	730.850	731.200	737.400	738.125	733.850	733.725	789.850	789.825			
20	731.800	732.050	738.775	738.725							
21	732.175	732.350	739.900	740.150							
22	733.125	733.250	740.325	740.525							
23	733.825	733.700	741.350	741.075							
24	774.150	774.125	741.700	741.800							
25	774.450	774.525									
26	775.175	775.225									
27	775.600	775.725									
28	776.575	776.550									
29	777.775	778.050									
30	778.225	778.800									
31	779.300	779.150									
32	780.125	779.975									
33	780.650	780.600									
34	781.625	781.400									

Channel	Group 38	Group 39	Group 40	Group 41	Group 42	Group 43	Group 44
	"European TV channel 54 optimized 734 - 742 MHz"	"European TV channel 55 optimized 742 - 750 MHz"	"European TV channel 56 optimized 750 - 758 MHz"	"European TV channel 57 optimized 758 - 766 MHz"	"European TV channel 58 optimized 766 - 774 MHz"	"European TV channel 59 optimized 774 - 782 MHz"	"European TV channel 60 optimized 782 - 790 MHz"
1	734.150	742.150	750.150	758.150	766.150	774.150	782.150
2	734.525	742.525	750.525	758.525	766.525	774.525	782.525
3	735.100	743.100	751.100	759.100	767.100	775.100	783.100
4	735.475	743.475	751.475	759.475	767.475	775.475	783.475
5	736.225	744.225	752.225	760.225	768.225	776.225	784.225
6	738.100	746.100	754.100	762.100	770.100	778.100	786.100
7	738.850	746.850	754.850	762.850	770.850	778.850	786.850
8	739.225	747.225	755.225	763.225	771.225	779.225	787.225
9	739.800	747.800	755.800	763.800	771.800	779.800	787.800
10	740.175	748.175	756.175	764.175	772.175	780.175	788.175
11	740.925	748.925	756.925	764.925	772.925	780.925	788.925
12	741.300	749.300	757.300	765.300	773.300	781.300	789.300
13	741.875	749.875	757.875	765.875	773.875	781.875	789.875

## P9 FREQUENCY BAND (710–787 MHz)

Channel	Group 1	Group 2	Group 3	Group 4	Group 5	Group 6	Group 7	Group 8	Group 9	Group 10
	"Full Range max. # of compatible frequencies 710 - 787 MHz (option 1)"	"Full Range max. # of compatible frequencies 710 - 787 MHz (option 2)"	"Full Range max. # of compatible frequencies 710 - 787 MHz (option 3)"	"Full Range max. # of compatible frequencies 710 - 787 MHz (option 4)"	"Full Range max. # of compatible frequencies Compatible with Group 1 of G7C 710 - 787 MHz"	"Full Range max. # of compatible frequencies Compatible with Group 2 of G7C 710 - 787 MHz"	"Full Range max. # of compatible frequencies Compatible with Group 1 of L3E 710 - 787 MHz"	"Full Range max. # of compatible frequencies Compatible with Group 2 of L3E 710 - 787 MHz"	"Full Range max. # of compatible frequencies Compatible with Group 3 of G7C and Group 3 of L3E 710 - 787 MHz"	"Full Range max. # of compatible frequencies Compatible with Group 4 of G7C and Group 4 of L3E 710 - 787 MHz"
1	710.450	710.425	710.800	710.125	710.225	710.825	710.200	710.750	710.500	710.375
2	710.950	711.025	711.475	710.800	710.700	711.550	711.325	711.700	712.400	710.775
3	711.825	712.100	711.975	711.925	711.350	712.575	712.800	712.375	712.750	711.350
4	712.150	712.975	712.950	712.300	713.150	713.175	713.525	713.425	713.700	712.650
5	713.025	713.450	714.250	713.550	713.825	714.525	713.950	714.175	716.300	713.075
6	714.825	714.325	715.975	714.150	715.850	716.125	714.700	715.450	717.275	713.775
7	715.775	716.200	716.800	714.975	717.250	717.125	716.300	718.075	717.750	714.200
8	716.375	716.925	717.225	715.600	717.675	718.550	717.150	719.675	718.625	719.125
9	717.250	717.425	717.950	716.575	718.325	718.875	717.450	720.975	720.525	719.625
10	718.300	719.150	719.750	717.275	719.900	720.300	718.325	722.500	721.225	721.300
11	719.975	719.725	723.175	720.225	721.750	722.875	718.900	724.650	721.550	722.375
12	720.400	721.100	724.175	720.675	727.125	723.675	726.175	724.950	722.925	722.700
13	721.275	725.725	725.525	721.450	727.875	724.175	727.100	725.650	727.725	723.225
14	721.975	726.750	726.075	721.925	729.375	724.900	727.775	727.175	729.100	724.275
15	722.900	727.600	727.350	722.850	730.550	726.450	728.650	728.050	729.875	724.850
16	723.375	728.150	729.750	723.425	731.150	727.825	730.625	729.125	730.900	727.650
17	726.525	729.800	731.900	725.200	731.950	731.700	730.925	732.050	731.725	728.150
18	734.150	730.925	732.850	725.950	733.550	733.425	732.375	735.525	732.325	729.175
19	735.150	732.600	734.700	734.075	734.775	734.550	732.800	736.725	733.275	729.775
20	737.050	733.225	737.175	734.375	735.525	736.000	734.425	739.850	735.100	737.450
21	737.650	733.525	739.125	735.600	738.675	738.200	739.675	740.575	736.475	737.875
22	738.025	734.900	741.300	735.900	739.575	738.850	741.325	741.125	737.200	738.975
23	738.600	735.725	741.725	737.925	742.950	740.125	742.125	742.225	741.500	739.650
24	739.375	736.850	742.700	738.850	744.175	740.900	743.550	742.600	744.325	740.675
25	739.775	741.950	745.050	739.600	744.675	742.325	743.850	745.025	744.725	742.050
26	740.350	744.425	746.050	740.675	745.800	747.450	745.225	747.275	746.250	742.875
27	742.850	746.425	747.225	741.100	746.600	748.025	747.250	749.900	746.900	743.250
28	743.350	747.400	747.650	744.075	747.700	748.975	747.775	750.375	748.725	744.250
29	752.850	749.175	749.025	748.775	748.350	749.350	749.450	751.175	749.300	744.725
30	753.200	749.900	750.000	749.725	751.575	750.275	753.950	753.750	750.325	752.600
31	753.975	751.650	751.325	750.450	753.400	751.000	754.550	755.400	754.575	753.900
32	755.900	752.675	752.175	750.975	754.325	752.050	755.625	756.150	754.875	754.575
33	756.375	754.525	753.325	751.700	758.650	753.375	756.450	756.650	755.575	755.900
34	757.125	755.000	754.175	752.750	759.350	754.275	757.075	758.325	756.825	756.350
35	757.500	756.625	755.700	754.250	761.875	754.950	758.125	758.850	757.900	757.050
36	759.275	757.675	757.900	754.800	762.300	755.350	760.400	763.100	758.350	758.625
37	760.100	758.525	758.525	755.575	763.150	756.875	760.875	764.225	763.925	759.000
38	760.500	759.575	760.375	756.125	764.750	766.525	768.125	764.525	764.600	759.850
39	761.975	761.825	761.825	757.275	766.625	767.125	769.275	769.175	765.675	766.875
40	763.250	762.250	764.650	757.700	768.150	768.000	769.725	769.800	766.200	769.875
41	764.075	763.175	766.050	767.325	768.775	768.375	771.100	771.075	767.600	770.950
42	768.425	768.450	768.750	767.750	769.200	769.275	771.550	772.050	770.250	771.850
43	769.725	770.450	769.150	768.850	773.475	769.975	772.675	774.475	771.750	772.400
44	770.300	771.525	770.575	769.775	776.275	770.875	773.575	775.650	772.050	773.225
45	771.575	773.100	771.125	771.100	777.250	772.225	774.675	776.275	772.600	774.400
46	771.975	773.450	772.650	771.625	780.050	772.650	775.150	777.150	778.725	775.850
47	773.950	774.400	774.375	772.650	780.650	774.000	776.425	778.350	780.925	776.175
48	775.125	774.900	775.425	773.025	781.525	774.850	776.900	778.850	781.950	778.200
49	775.750	776.050	776.950	773.975	782.625	775.525	780.825	783.800	782.375	780.925
50	777.050	776.875	777.300	775.725	783.175	776.650	782.425	784.100	783.325	782.650
51	778.000	777.500	781.075	780.950	784.225	783.550	782.875	784.900	783.650	784.200
52	782.875	777.950	781.475	782.275	785.525	784.250	783.750	785.325	784.450	785.075
53	783.275	784.200	782.450	782.900	786.100	785.950	785.875	786.200	786.700	786.800
54	784.200	784.875	783.150	783.200						
55	784.850	785.925	783.650	783.875						
56		786.375	784.475	785.125						
57				785.950						

## P9 FREQUENCY BAND (710–787 MHz) Continued

Channel	Group 11	Group 12	Group 13	Group 14	Group 15	Group 16	Group 17	Group 18	Group 19	Group 20	Group 21	Group 22	Group 23
	"Germany preferred: Full Range w/o TV Ch. 52 710 - 718 MHz + 726 - 787 MHz"	"Germany preferred: Full Range w/o TV Ch. 53 710 - 726 MHz + 734 - 787 MHz"	"Germany preferred: Full Range w/o TV Ch. 54 710 - 734 MHz + 742 - 787 MHz"	"Germany preferred: Full Range w/o TV Ch. 55 710 - 742 MHz + 750 - 787 MHz"	"Germany preferred: Full Range w/o TV Ch. 56 710 - 750 MHz + 758 - 787 MHz"	"Germany preferred: Full Range w/o TV Ch. 57 710 - 758 MHz + 766 - 787 MHz"	"Germany preferred: Full Range w/o TV Ch. 58 710 - 774 MHz + 782 - 787 MHz"	"Germany preferred: Full Range w/o TV Ch. 60 710 - 774 MHz + 782 - 787 MHz"	"Germany preferred: Full Range w/o TV Ch. 59 710 - 782 MHz + 786 - 787 MHz"	"Germany preferred: Full Range w/o TV Ch. 60 710 - 782 MHz + 786 - 787 MHz"	"Germany preferred: Full Range w/o TV Ch. 59 710 - 782 MHz + 786 - 787 MHz"	"Germany preferred: Full Range w/o TV Ch. 59 710 - 782 MHz + 786 - 787 MHz"	
1	710.200	710.200	710.350	710.350	710.575	710.275	710.600	710.200	710.750	710.675	710.225	710.425	710.375
2	710.700	710.575	710.725	711.700	711.425	710.900	711.775	711.125	711.275	712.075	710.600	710.875	710.800
3	711.400	711.975	711.450	713.250	712.075	711.950	712.200	711.725	712.000	713.275	711.325	711.650	711.550
4	711.725	712.475	711.975	713.700	712.450	712.750	713.375	712.500	713.550	714.650	711.875	712.675	712.125
5	712.275	713.200	714.575	714.625	713.175	713.925	714.175	713.625	714.300	715.225	712.225	713.100	712.525
6	714.900	713.575	715.275	715.000	714.725	714.375	715.300	714.325	715.500	715.625	712.750	714.225	713.200
7	715.450	714.125	715.625	716.500	716.775	715.725	716.875	716.350	718.100	716.350	715.100	715.550	714.050
8	715.825	715.600	716.475	717.275	717.775	716.400	717.575	718.800	718.425	716.900	715.800	716.075	715.275
9	716.475	716.000	717.000	718.675	718.600	718.175	719.250	719.425	719.225	718.800	716.300	717.050	716.250
10	717.325	720.200	717.900	720.325	720.150	721.350	720.175	720.375	721.075	719.950	716.975	717.400	717.000
11	717.850	721.175	722.950	721.125	720.625	721.700	721.375	720.775	721.725	720.250	723.025	726.925	717.525
12	727.975	721.975	724.900	723.825	721.275	722.225	722.150	723.100	723.475	720.900	724.175	727.675	726.175
13	728.750	722.450	725.750	724.400	725.300	722.925	723.925	723.525	724.450	722.200	724.850	728.125	727.050
14	729.225	723.175	726.350	725.475	726.275	723.850	724.775	724.200	726.950	722.650	726.175	728.800	727.525
15	729.900	723.550	727.175	729.575	727.550	724.950	725.350	724.700	727.475	723.300	727.075	729.650	728.225
16	730.250	724.150	727.475	730.925	728.625	726.525	728.375	726.050	728.350	723.775	728.425	730.300	730.050
17	730.775	725.350	728.200	731.325	731.575	727.250	728.800	726.950	731.075	734.850	728.850	731.450	730.450
18	733.100	725.650	730.450	732.075	732.225	729.775	729.950	729.400	731.650	735.900	729.525	732.125	731.175
19	734.175	734.925	730.975	732.475	733.275	734.350	730.750	732.275	732.000	736.475	730.450	735.800	731.500
20	734.725	736.075	732.200	733.425	733.575	735.150	731.775	736.375	733.625	737.275	731.725	737.100	732.075
21	737.275	736.875	732.525	736.125	734.150	738.475	733.425	736.725	734.050	738.300	732.300	737.500	734.500
22	737.825	738.600	733.025	736.575	735.275	739.125	734.025	737.325	737.300	739.025	734.375	738.125	735.050
23	738.950	739.150	742.700	738.450	742.350	739.950	737.075	738.750	737.875	740.300	741.375	740.725	736.375
24	741.750	739.950	743.325	739.000	743.525	740.350	740.300	739.550	740.100	740.975	742.025	741.075	737.275
25	742.375	740.950	744.525	739.300	744.075	741.975	745.050	742.000	743.175	741.300	743.025	741.700	739.250
26	744.075	741.650	744.850	739.975	744.925	742.775	746.275	743.050	744.300	741.950	743.550	750.200	740.500
27	748.450	742.550	745.525	750.850	745.575	744.525	746.925	745.050	745.950	743.875	745.250	750.500	740.950
28	748.950	745.325	748.050	752.025	746.500	746.750	747.825	746.250	747.950	749.725	746.075	750.975	751.275
29	751.200	748.650	748.700	752.900	746.800	747.650	748.125	748.275	749.475	750.200	746.550	752.125	752.025
30	751.900	749.450	749.100	753.525	748.425	748.275	749.600	752.125	750.250	750.925	747.225	754.525	752.550
31	752.300	749.950	749.975	753.975	749.175	751.700	750.900	754.325	750.550	752.500	748.100	755.050	753.475
32	753.075	751.050	750.325	754.775	749.750	752.225	752.550	754.750	752.125	753.275	748.775	755.400	754.225
33	755.925	751.725	752.200	755.325	758.600	752.925	753.250	755.350	753.400	753.575	749.850	756.450	755.350
34	756.375	752.850	758.475	756.875	759.025	756.000	755.775	756.750	755.475	754.975	758.525	756.750	756.975
35	757.000	753.250	759.275	758.175	759.975	756.425	756.300	757.575	755.975	755.850	758.950	757.325	757.850
36	759.325	754.275	761.450	759.200	760.425	757.150	757.475	759.500	757.100	757.200	759.750	757.675	758.425
37	760.275	754.975	762.300	760.025	761.100	766.450	757.850	761.025	759.050	757.700	761.275	766.525	760.050
38	761.875	756.075	763.350	760.500	762.025	766.950	759.750	762.000	759.575	766.625	763.075	767.175	760.875
39	765.275	757.675	764.075	761.225	762.425	767.250	760.400	764.850	761.875	767.200	764.300	767.525	762.425
40	766.175	758.425	765.050	762.125	763.425	767.750	761.225	765.850	762.825	767.525	764.700	768.325	766.800
41	766.525	761.475	765.650	768.650	765.275	768.725	762.225	766.200	763.375	768.725	766.575	769.825	767.275
42	768.475	766.375	767.625	769.850	766.675	769.275	764.225	767.050	765.350	769.025	766.950	770.375	768.550
43	768.975	767.700	770.025	772.425	767.650	771.800	774.150	768.075	766.825	771.700	767.850	771.575	770.050
44	770.950	769.275	771.425	773.775	773.750	772.525	774.675	769.475	769.350	772.200	769.425	771.950	770.875
45	772.275	771.050	773.250	774.150	775.500	773.075	775.475	771.100	770.550	772.875	770.275	773.875	771.950
46	773.250	771.525	774.100	774.725	776.050	773.425	776.625	771.600	772.550	773.225	771.700	774.625	772.500
47	774.425	772.475	775.500	775.500	777.625	774.075	777.525	772.375	772.950	773.750	772.450	775.150	774.300
48	774.825	774.100	776.300	776.475	778.750	774.550	779.350	773.900	780.650	772.950	772.450	781.550	775.925
49	779.025	774.775	777.550	779.375	779.450	775.450	780.200	773.900	775.550	781.225	773.800	782.325	777.275
50	779.525	776.225	779.075	780.050	780.475	780.675	780.675	782.425	776.050	782.075	782.450	783.975	777.925
51	781.800	777.500	779.775	782.025	781.800	782.475	781.375	783.300	776.375	782.400	783.075	784.950	779.025
52	782.925	782.975	780.100	782.925	782.675	782.825	781.700	783.925	777.500	783.125	784.900	785.425	779.625
53	783.825	783.775	782.200	783.450	784.675	783.375	782.350	784.975	777.900	784.625	785.350	786.175	780.525
54	785.300	785.150	785.625	786.675	786.375	784.650	784.325	786.325	780.000	785.375	786.525	786.675	781.150
55	786.025	785.475				785.350	786.475		780.775	785.775			
56	786.500					785.700			781.300	786.350			
57									786.675				

## P9 FREQUENCY BAND (710–787 MHz) Continued

Channel	Group 24	Group 25	Group 26	Group 27	Group 28	Group 29	Group 30	Group 31
	"Netherlands preferred: TV Ch. 51, 53, 59 (option 1) 710 - 718 MHz + 726 - 734 MHz + 774 - 782 MHz"	"Netherlands preferred: TV Ch. 51, 53, 59 (option 2) 710 - 718 MHz + 726 - 734 MHz + 774 - 782 MHz"	"Belgium preferred: VRT TV Ch. 51, 54 (option 1) 710 - 718 MHz + 734 - 742 MHz"	"Belgium preferred: VRT TV Ch. 51, 54 (option 2) 710 - 718 MHz + 734 - 742 MHz"	"Belgium preferred: BRF TV Ch. 52, 53 (option 1) 718 - 734 MHz"	"Belgium preferred: BRF TV Ch. 52, 53 (option 2) 718 - 734 MHz"	"Belgium preferred: Licensed Use TV Ch. 59, 60 (option 1) 774 - 787 MHz"	"Belgium preferred: Licensed Use TV Ch. 59, 60 (option 2) 774 - 787 MHz"
1	710.450	710.450	710.125	710.325	718.300	718.225	774.400	775.025
2	710.975	711.100	711.200	710.675	719.700	718.800	774.700	775.400
3	711.275	711.500	711.975	711.375	720.150	719.575	775.400	776.275
4	712.400	712.300	712.475	711.725	720.875	719.950	775.875	776.700
5	712.750	712.875	713.200	712.250	721.400	720.725	776.600	777.800
6	713.300	713.800	713.550	712.950	722.225	721.325	777.600	778.550
7	714.725	714.950	714.125	713.300	722.850	722.375	777.975	779.125
8	715.800	715.725	715.525	715.750	723.750	723.625	779.000	779.950
9	716.350	716.325	716.100	716.450	724.125	724.200	779.525	781.175
10	717.275	716.675	716.500	716.900	725.075	725.475	783.825	783.450
11	717.800	717.375	717.300	717.525	725.750	727.850	784.875	784.075
12	726.275	717.875	717.675	717.850	727.100	728.175	785.375	785.100
13	727.075	726.125	734.250	734.275	729.550	729.400	785.675	785.400
14	727.675	726.675	734.650	734.875	730.275	729.800	786.175	785.900
15	728.100	727.050	735.250	735.900	731.175	730.400		
16	728.875	727.700	735.650	736.675	731.600	731.175		
17	729.350	728.150	736.425	737.100	732.275	732.325		
18	730.250	730.575	736.825	737.800	732.625	733.150		
19	730.850	731.200	737.400	738.125	733.850	733.725		
20	731.800	732.050	738.775	738.725				
21	732.175	732.350	739.900	740.150				
22	733.125	733.250	740.325	740.525				
23	733.825	733.700	741.350	741.075				
24	774.150	774.125	741.700	741.800				
25	774.450	774.525						
26	775.175	775.225						
27	775.600	775.725						
28	776.575	776.550						
29	777.775	778.050						
30	778.225	778.800						
31	779.300	779.150						
32	780.125	779.975						
33	780.650	780.600						
34	781.625	781.400						

Channel	Group 32	Group 33	Group 34	Group 35	Group 36	Group 37	Group 38	Group 39	Group 40	Group 41
	"European TV channel 51 optimized 710 - 718 MHz"	"European TV channel 52 optimized 718 - 726 MHz"	"European TV channel 53 optimized 726 - 734 MHz"	"European TV channel 54 optimized 734 - 742 MHz"	"European TV channel 55 optimized 742 - 750 MHz"	"European TV channel 56 optimized 750 - 758 MHz"	"European TV channel 57 optimized 758 - 766 MHz"	"European TV channel 58 optimized 766 - 774 MHz"	"European TV channel 59 optimized 774 - 782 MHz"	"European TV channel 60 optimized 782 - 787 MHz"
1	710.150	718.150	726.150	734.150	742.150	750.150	758.150	766.150	774.150	782.150
2	710.525	718.525	726.525	734.525	742.525	750.525	758.525	766.525	774.525	782.525
3	711.100	719.100	727.100	735.100	743.100	751.100	759.100	767.100	775.100	783.100
4	711.475	719.475	727.475	735.475	743.475	751.475	759.475	767.475	775.475	783.475
5	712.225	720.225	728.225	736.225	744.225	752.225	760.225	768.225	776.225	784.225
6	714.100	722.100	730.100	738.100	746.100	754.100	762.100	770.100	778.100	786.100
7	714.850	722.850	730.850	738.850	746.850	754.850	762.850	770.850	778.850	786.850
8	715.225	723.225	731.225	739.225	747.225	755.225	763.225	771.225	779.225	
9	715.800	723.800	731.800	739.800	747.800	755.800	763.800	771.800	779.800	
10	716.175	724.175	732.175	740.175	748.175	756.175	764.175	772.175	780.175	
11	716.925	724.925	732.925	740.925	748.925	756.925	764.925	772.925	780.925	
12	717.300	725.300	733.300	741.300	749.300	757.300	765.300	773.300	781.300	
13	717.875	725.875	733.875	741.875	749.875	757.875	765.875	773.875	781.875	

## Q5 FREQUENCY BAND (740.000 - 814.000 MHz)

Channel	Group 1	Group 2	Group 3	Group 4	Group 5	Group 6	Group 7	Group 8	Group 9	Group 10
	Full Range max. # of comp. frequencies (option 1)	Full Range max. # of comp. frequencies (option 2)	Full Range max. # of comp. frequencies (option 3)	Full Range max. # of comp. frequencies (option 4)	France preferred: User Group A (option 1)	France preferred: User Group A (option 2)	France preferred: User Group A (option 3)	France preferred: User Group B (option 1)	France preferred: User Group B (option 2)	France preferred: User Group B (option 3)
1	740.300	740.425	740.100	740.625	740.250	740.250	742.750	740.900	740.500	740.900
2	740.825	740.850	740.625	741.050	742.750	743.250	743.500	741.300	740.900	741.300
3	742.400	742.100	742.200	742.300	743.250	743.750	745.250	742.100	742.100	746.975
4	742.800	742.650	742.600	742.850	744.500	745.250	746.500	744.025	744.025	748.900
5	745.000	744.025	744.800	744.225	746.500	746.500	747.500	745.500	744.775	749.700
6	745.975	744.675	745.775	744.875	747.250	753.750	751.750	749.300	746.225	752.025
7	748.850	745.600	748.650	745.800	752.500	755.500	753.250	754.225	756.900	753.500
8	749.950	750.050	749.750	750.250	759.750	763.500	753.750	760.025	761.500	764.500
9	753.350	752.625	753.150	752.825	767.500	769.250	758.750	770.975	764.500	768.775
10	756.100	753.525	755.900	753.725	768.500	771.250	771.750	774.100	770.975	774.100
11	764.875	758.825	764.675	759.025	769.750	772.250	775.500	774.500	772.900	776.025
12	770.150	766.275	769.950	766.475	771.750	774.750	776.500	781.300	773.300	778.975
13	771.800	769.350	771.600	769.550	772.250	775.500	777.750	782.500	776.775	781.700
14	772.575	770.025	772.375	770.225	786.500	785.750	787.500	784.025	778.225	782.500
15	774.325	771.300	774.125	771.500	794.500	791.750	791.500	786.225	778.975	784.775
16	776.625	777.375	776.425	777.575	796.250	795.500	799.750	786.975	796.500	796.500
17	782.700	779.675	782.500	779.875	799.750	800.500	801.750	802.975	797.700	800.775
18	783.975	781.425	783.775	781.625	803.500	801.250	803.250	806.100	806.500	804.500
19	784.650	782.200	784.450	782.400	806.750	803.250	804.250	808.025	808.025	805.700
20	787.725	783.850	787.525	784.050	807.500	807.500	807.500	809.500	810.225	810.225
21	795.175	789.125	794.975	789.325	809.750	808.500	809.250	812.500	810.975	810.975
22	800.475	797.900	800.275	798.100	811.750	809.750	809.750	813.300	813.700	812.900
23	801.325	800.650	801.125	800.850	812.250	811.500	810.500	813.700	753.500	813.300
24	803.950	804.050	803.750	804.250	748.250	745.750	744.500	746.225	754.975	744.775
25	808.400	805.150	808.200	805.350	750.750	750.750	745.750	753.500	757.700	746.225
26	809.325	808.025	809.125	808.225	755.750	752.500	751.250	758.100	766.500	750.100
27	809.975	809.000	809.775	809.200	759.250	753.250	754.500	758.500	781.700	765.300
28	811.350	811.200	811.150	811.400	762.500	754.500	755.500	765.300	788.500	768.025
29	811.900	811.600	811.700	811.800	763.500	758.750	759.500	768.775	789.300	772.500
30	813.150	813.175	812.950	813.375	766.750	760.500	760.500	769.500	792.025	773.700
31	813.575	813.700	813.375	813.900	770.500	767.500	766.750	772.900	792.775	781.300
32	754.400	751.050	754.200	751.250	775.500	770.500	770.500	788.900	797.300	792.025
33	768.000	772.025	767.800	772.225	779.500	776.500	771.250	797.300	798.500	794.975
34	778.000	776.000	777.800	776.200	782.750	777.750	779.500	801.500	800.775	797.300
35	781.975	786.000	781.775	786.200	783.250	779.250	782.750			
36	802.950	799.600	802.750	799.800	784.500	782.750	784.500			
37	743.550	746.200	743.350	746.400	785.250	784.500	785.250			
38	750.400	755.625	750.200	755.825	788.250	785.250	785.750			
39	751.425	768.400	751.225	768.600	791.750	786.500	786.500			
40	785.600	802.575	785.400	802.775	795.500	788.250	790.750			
41	798.375	803.600	798.175	803.800	798.750	796.250	793.250			
42	807.800	810.450	807.600	810.650	800.500	801.750	800.500			
43	767.400	754.825	767.200	755.025	808.500	810.500	808.500			
44	768.950	758.375	768.750	758.575	810.500	812.250	812.250			
45	769.700	763.725	769.500	763.925						
46	790.275	784.300	790.075	784.500						
47	795.625	785.050	795.425	785.250						
48	799.175	786.600	798.975	786.800						

Channel	Group11	Group 12	Group 13	Group 14	Group 15	Group 16	Group 17	Group 18	Group 19	Group 20
	France preferred: User Group C (option 1)	France preferred: User Group C (option 2)	France preferred: User Group C (option 3)	Germany preferred: User Group 1 790-814 MHz	Germany preferred: User Group 2 790-814 MHz	Germany preferred: User Group 3A 790-814 MHz	Germany preferred: User Group 3B 790-814 MHz	Germany preferred: User Group 3C 790-814 MHz	Germany preferred: User Group 3D 790-814 MHz	Germany preferred: User Group 4 790-814 MHz (option 1)
1	741.100	740.700	741.100	790.100	790.100	790.250	790.300	790.350	790.400	791.475
2	741.900	741.100	741.500	791.050	791.575	792.325	791.250	791.300	790.800	792.525
3	742.300	742.300	742.300	793.575	792.050	792.900	792.950	794.925	798.800	793.200
4	743.000	743.000	744.975	794.675	794.425	793.725	794.875	795.450	803.500	795.625
5	748.700	750.300	746.025	803.200	796.250	795.350	795.400	801.000	804.725	797.125
6	751.000	752.975	748.000	804.425	797.500	799.900	796.150	803.450	805.700	802.525
7	754.025	757.900	752.225	806.100	799.575	800.900	798.700	806.350	806.400	804.850
8	765.500	759.000	757.500	806.500	806.600	807.200	801.775	806.750	808.475	805.250
9	768.225	770.775	759.000	811.200	809.325	810.825	807.950	808.425	809.050	808.550
10	768.975	772.700	773.100	811.950	810.425	812.100	808.375	809.825	809.875	809.950
11	770.025	774.300	773.500	813.400	812.950	812.575	809.775	813.650	810.975	811.550
12	775.000	778.025	776.225	813.900	813.900	794.825	812.625	793.825	792.475	812.850

Q5 FREQUENCY BAND (740.000 - 814.000 MHz) Continued

Channel	Group 11	Group 12	Group 13	Group 14	Group 15	Group 16	Group 17	Group 18	Group 19	Group 20
	France preferred: User Group C (option 1)	France preferred: User Group C (option 2)	France preferred: User Group C (option 3)	Germany preferred: User Group 1 790-814 MHz	Germany preferred: User Group 2 790-814 MHz	Germany preferred: User Group 3A 790-814 MHz	Germany preferred: User Group 3B 790-814 MHz	Germany preferred: User Group 3C 790-814 MHz	Germany preferred: User Group 3D 790-814 MHz	Germany preferred: User Group 4 790-814 MHz (option 1)
13	778.775	781.100	776.975	796.425	790.600	808.325	806.700	796.675	793.875	813.775
14	780.700	782.300	780.000	797.400	805.500	811.350	810.875	797.650	794.975	799.400
15	783.000	784.975	781.900	797.900	805.900		811.400	809.000	795.500	810.525
16	797.500	786.775	784.225	800.750	808.800		813.600	810.925	796.725	
17	797.900	797.900	788.700							
18	799.000	800.225	802.025							
19	805.100	804.000	804.700							
20	806.300	805.100	805.100							
21	808.225	807.000	805.900							
22	808.975	808.225	810.025							
23	810.775	812.700	812.000							
24	813.100	813.500	813.500							
25	746.775	744.225	752.975							
26	749.100	748.700	754.025							
27	752.225	749.100	756.700							
28	754.775	752.225	774.300							
29	756.700	754.775	782.300							
30	764.000	764.000	788.000							
31	782.300	768.225	789.100							
32	784.225	772.000	789.900							
33	784.975	780.700	792.975							
34	788.000	791.000	802.775							
35	792.225	794.025	806.300							
36	813.900	794.775	810.775							

Channel	Group 21	Group 22	Group 23	Group 24	Group 25	Group 26	Group 27	Group 28	Group 29	Group 30	Group 31	Group 32	Group 33
	Germany preferred: User Group 4 790-814 MHz (option 2)	Germany preferred: Fixed Installations 742-790 MHz	Optimized: TV oh. 55 742-750 MHz	Optimized: TV oh. 56 750-758 MHz	Optimized: TV oh. 57 758-766 MHz	Optimized: TV oh. 58 766-774 MHz	Optimized: TV oh. 59 774-782 MHz	Broadcasters preferred: TV oh. 60 782-790 MHz	Optimized: TV oh. 61 790-798 MHz	Optimized: TV oh. 62 798-806 MHz	Netherlands preferred: TV oh. 63 806-814 MHz	Combined UHF-R Q5 and R9: max. # of compatible	Combined UHF-R Q5 and R9: max. # of compatible
1	790.925	742.750	742.100	750.100	758.100	766.100	774.100	782.225	790.100	798.100	806.100	742.000	740.175
2	791.400	744.625	742.925	750.925	758.925	766.925	774.925	782.650	790.925	798.925	806.925	743.200	740.900
3	792.625	745.100	743.525	751.525	759.525	767.525	775.525	783.900	791.525	799.525	807.525	743.850	742.300
4	795.025	745.975	744.575	752.575	760.575	768.575	776.575	784.625	792.575	800.575	808.575	744.800	742.850
5	795.650	747.650	745.900	753.900	761.900	769.900	777.900	785.775	793.900	801.900	809.900	748.175	743.975
6	797.050	748.225	747.650	755.650	763.650	771.650	779.650	786.400	795.650	803.650	811.650	748.650	746.550
7	802.000	753.225	748.050	756.050	764.050	772.050	780.050	787.325	796.050	804.050	812.050	749.500	747.550
8	803.575	754.750	749.200	757.200	765.200	773.200	781.200	787.850	797.200	805.200	813.200	751.250	751.525
9	805.750	755.950	749.900	757.900	765.900	773.900	781.900	788.675	797.900	805.900	813.900	752.750	751.925
10	810.300	759.350	746.600	754.600	762.600	770.600	778.600		794.600	802.600	810.600	758.025	765.325
11	811.050	762.275										760.925	766.550
12	812.850	770.100										770.900	767.425
13	813.775	774.375										774.450	773.025
14	799.400	775.775										776.400	773.525
15	808.550	777.500										777.475	776.625
16		779.750										778.875	777.950
17		782.550										783.075	781.950
18		784.475										796.800	783.775
19		785.975										797.975	798.600
20		787.050										804.325	804.250
21		788.350										806.225	808.800
22		788.875										741.200	748.175
23		743.500										773.450	752.600
24		772.075										775.700	770.875
25		755.450										810.100	778.900
26		756.750										745.475	783.375
27		770.825										754.900	766.125
28		772.725										762.625	771.775
29		776.450										768.825	786.450
30		789.875										783.575	802.075
31		760.000										797.575	812.900
32		783.925										755.525	745.950
33												756.650	749.375
34												758.975	763.475
35												781.700	788.125
36												807.675	800.900

## R9 FREQUENCY BAND (790.000-865.000 MHz)

Channel	Full Range max. # of compatible frequencies (option 1)	Full Range max. # of compatible frequencies (option 2)	Full Range max. # of compatible frequencies (option 3)	Full Range max. # of compatible frequencies (option 4)	Optimized: TV oh. 61-63 & TV oh. 67-69 & EU harmonized: 790-814 & 838-862 MHz & 863-865 MHz	Optimized: TV oh. 61-63 & TV oh. 69 & EU harmonized: 790-814 & 854-862 MHz & 863-865 MHz	Germany preferred: User Group 4 790-814 MHz & 838-865 MHz (only indoor)	Germany preferred: User Group 4 790-814 MHz & 854-865 MHz (indoor and outdoor)	Germany preferred: User Group 3A 790-814 MHz & 838-865 MHz	Germany preferred: User Group 3B 790-814 MHz & 838-865 MHz	Germany preferred: User Group 3C 790-814 MHz & 838-865 MHz
	Group 1	Group 2	Group 3	Group 4	Group 5	Group 6	Group 7	Group 8	Group 9	Group 10	Group 11
1	790.650	791.300	790.725	790.525	790.175	790.525	792.550	792.625	790.250	791.950	790.350
2	791.900	792.050	791.825	791.125	793.025	791.775	794.000	793.175	792.325	793.775	791.300
3	794.200	793.225	792.500	791.925	793.425	792.400	794.525	794.025	792.900	794.875	794.925
4	795.275	793.875	794.950	794.025	798.225	793.550	797.200	795.625	793.725	798.300	796.675
5	795.975	795.375	795.375	795.850	799.100	796.150	799.400	797.750	794.825	800.950	800.425
6	797.425	798.050	796.900	798.125	799.600	797.100	801.200	801.225	799.200	806.300	805.650
7	797.975	798.475	801.725	801.725	800.675	803.025	802.175	805.100	799.900	806.700	806.350
8	802.175	800.925	802.675	802.750	801.325	804.500	805.750	807.425	804.100	808.375	808.425
9	803.725	805.425	803.975	803.225	805.975	805.000	809.125	810.100	810.825	811.400	809.000
10	804.650	806.700	804.750	809.975	809.900	807.225	811.575	810.525	812.100	812.150	809.825
11	808.600	809.050	809.275	816.025	810.875	810.525	812.825	811.600	812.575	813.600	811.450
12	814.550	812.050	817.225	818.000	813.450	812.100	813.250	813.300	839.200	838.300	839.300
13	817.550	823.825	820.550	818.575	838.175	813.450	840.625	854.950	839.900	840.375	840.425
14	823.625	825.000	823.175	819.375	838.975	854.325	841.425	856.625	840.325	840.950	841.825
15	828.275	826.550	827.825	821.500	840.125	854.975	843.725	857.475	842.825	841.775	843.450
16	829.100	829.700	829.375	822.400	841.875	855.900	845.100	857.950	844.100	843.400	849.000
17	830.625	831.500	829.875	828.575	843.225	857.700	845.800	859.050	846.250	846.700	852.675
18	831.625	832.550	830.625	829.250	847.975	858.850	848.525	859.725	847.200	847.950	853.650
19	833.275	842.775	834.825	830.275	850.975	860.750	849.125	861.175	856.900	855.950	858.925
20	833.875	844.100	842.650	835.075	851.475	863.175	853.800	861.750	857.725	856.950	859.450
21	841.575	846.575	844.050	843.050	853.125	864.000	855.400	791.450	860.100	860.150	860.675
22	846.050	851.125	845.900	851.975	855.625	864.475	857.950	801.950	795.350	860.625	793.825
23	851.950	853.475	853.025	852.800	857.475	792.825	859.650	805.775	807.200	791.250	801.000
24	855.900	857.750	855.000	855.125	861.475	795.750	861.150	863.525	807.900	795.400	806.750
25	856.825	858.525	855.600	856.475	863.775	805.750	795.700	864.200	811.350	797.600	813.650
26	858.425	858.950	856.725	856.975	864.175	806.300	800.625		856.325	808.950	854.350
27	859.050	860.725	859.050	858.025	864.825	807.875	810.100		859.350	854.700	857.825
28	860.550	863.350	859.450	861.575	790.800	810.975	810.550		860.575	859.400	861.650
29	863.400	863.900	863.625	863.625	794.350	811.700	839.475		863.100	863.125	863.250
30	863.825	864.875	864.350	864.325	794.775	857.225	849.925		863.675	863.750	
31	864.625	794.775	801.000	792.450	804.225	861.300	854.950		864.475	864.825	
32	799.275	799.800	822.000	827.450	805.400		857.200				
33	822.150	825.575	827.200	845.000	806.800		863.200				
34	830.225	827.075	860.975	845.600	808.600		863.675				
35	847.400	845.700	864.875	794.775	811.475						
36	807.375	855.450	791.425	795.175	840.800						
37	810.825	811.600	803.425	806.125	843.850						
38	815.825	813.825	808.825	809.225	844.275						
39	816.300	819.850	834.400	811.875	849.325						
40	820.250	841.075	840.050	813.275	860.725						
41	821.050	845.100	851.950	830.700							
42	839.850	847.800	861.800	831.725							
43	842.400	813.400	807.475	834.425							
44	843.925	816.725	822.425	843.750							
45	845.150	818.975	835.800	847.250							
46	846.625	840.675	840.500	848.375							
47	853.775	856.100	843.525	849.900							

## R9 FREQUENCY BAND (790.000-865.000 MHz) Continued

Channel	Germany preferred: User Group 3D 790-814 MHz & 838-865 MHz	Germany preferred: User Group 2 790-814 MHz & 838-862 MHz	Germany preferred: User Group 1 790-814 MHz & 838-862 MHz	France preferred: User Group A (option 1)	France preferred: User Group A (option 2)	France preferred: User Group B (option 1)	France preferred: User Group B (option 2)	France preferred: User Group C (option 1)	France preferred: User Group C (option 2)	Optimized: TV oh. 61 790-798 MHz	Optimized: TV oh. 62 798-806 MHz
	Group 12	Group 13	Group 14	Group 15	Group 16	Group 17	Group 18	Group 19	Group 20	Group 21	Group 22
1	790.400	790.100	791.050	791.500	790.750	790.500	792.775	790.300	791.000	790.100	798.100
2	791.350	793.325	792.175	792.500	791.750	792.025	794.225	791.000	794.775	790.925	798.925
3	794.975	794.425	792.750	793.750	793.250	794.225	794.975	792.975	797.100	791.525	799.525
4	796.725	796.950	795.200	795.250	793.750	794.975	796.900	797.100	797.500	792.575	800.575
5	800.475	797.900	796.425	795.750	794.500	796.900	798.100	797.900	798.300	793.900	801.900
6	805.700	800.050	799.750	800.500	799.500	797.300	798.500	800.975	802.775	795.650	803.650
7	806.400	806.100	802.675	801.250	801.750	801.500	801.500	806.300	808.975	796.050	804.050
8	808.475	807.575	805.400	807.750	808.500	809.500	806.500	813.500	813.100	797.200	805.200
9	809.050	808.050	806.100	811.250	817.750	812.900	810.975	818.025	820.000	797.900	805.900
10	809.875	808.800	811.950	819.500	820.250	821.300	822.100	820.000	822.300	794.600	802.600
11	811.500	813.500	813.400	822.750	823.250	822.500	824.025	822.300	823.000		
12	839.350	838.100	838.100	824.500	823.750	826.225	826.225	824.975	824.225		
13	840.475	840.050	838.500	825.750	826.500	826.975	826.975	828.000	828.000		
14	841.875	840.800	843.950	827.250	827.500	828.500	829.300	828.700	829.100		
15	843.500	843.825	851.200	828.250	828.250	828.900	829.700	829.100	829.500		
16	849.050	844.250	852.425	790.750	795.500	798.500	805.300	792.225	790.300		
17	852.725	846.100	853.400	798.750	802.500	802.975	809.500	796.700	807.000		
18	853.700	849.325	854.100	799.500	803.750	810.225	812.900	800.225	812.700		
19	858.975	853.900	856.175	809.250	806.750	813.300	813.300	812.700	814.300		
20	859.500	859.825	856.750	810.500	811.500	814.500	814.100	816.975	816.225		
21	860.725	860.950	857.575	812.250	814.750	816.775	822.500	826.025	824.975		
22	793.875	861.500	858.675	815.750	815.500	863.150	863.125	863.150	863.125		
23	801.050	790.600	797.900	816.500	816.500	863.550	863.525	863.550	863.525		
24	806.800	791.575	807.050	817.750	818.500	864.175	864.175	864.175	864.175		
25	813.700	792.800	807.750	823.500	819.750	864.600	864.625	864.600	864.625		
26	854.400	811.250	859.200	863.150	825.250						
27	857.875	811.825	861.400	863.550	863.125						
28	861.700	812.950		864.175	863.525						
29	863.300	855.575		864.600	864.175						
30		856.050			864.625						
31		859.250									

Channel	Netherlands preferred: TV Ch. 63 806-814 MHz (option 1)	Netherlands preferred: TV Ch. 63 806-814 MHz (option 2)	Optimized: TV Ch. 61-63 790-814 MHz	FIN preferred: 790-822 MHz (option 1)	FIN preferred: 790-822 MHz (option 2)	Sweden preferred: 800-814 MHz (option 1)	Sweden preferred: 800-814 MHz (option 2)	NOR / DEN preferred: 800-820 MHz (option 2)	Optimized TV channels: TV Ch. 67 838-846 MHz	Optimized TV channels: TV Ch. 68 846-854 MHz
	Group 23	Group 24	Group 25	Group 26	Group 27	Group 28	Group 29	Group 30	Group 31	Group 32
1	806.100	806.100	790.150	790.775	790.675	800.300	800.125	800.325	838.100	846.100
2	806.925	806.800	791.200	791.175	791.825	800.700	801.125	801.800	838.925	846.925
3	807.525	807.950	794.200	792.125	792.575	801.975	803.125	802.200	839.525	847.525
4	808.575	808.350	795.375	792.650	794.225	802.500	803.775	802.950	840.575	848.575
5	809.900	810.100	796.875	794.325	794.875	804.075	805.675	805.825	841.900	849.900
6	811.650	811.425	797.825	801.550	796.925	806.950	807.050	807.950	843.650	851.650
7	812.050	812.475	801.650	802.400	800.325	808.325	809.925	810.475	844.050	852.050
8	813.200	813.075	803.350	805.200	805.550	810.225	811.500	811.075	845.200	853.200
9	813.900	813.900	806.125	806.450	806.800	810.875	812.025	812.450	845.900	853.900
10	810.600	809.400	808.675	811.675	809.600	812.875	813.300	814.825	842.600	850.600
11			809.425	815.075	810.450	813.875	813.700	817.800		
12			811.550	817.125	817.675	803.450	804.925	818.300		
13			812.950	817.775	819.350	809.075	810.550	819.575		
14			813.350	819.425	819.875			800.850		
15			790.775	820.175	820.825			804.600		
16				794.900	821.325	821.225			813.250	
17				805.275	794.800	795.325			816.675	
18				806.750	799.400	797.425				
19				807.600	799.900	801.750				
20				810.375	804.200	802.775				
21					807.375	804.625				
22					809.225	807.800				
23					810.250	812.100				
24					814.575	812.600				
25					816.675	817.200				

## R9 FREQUENCY BAND (790.000-865.000 MHz) Continued

Channel	BEL / TUR / UK preferred: TV Ch. 69 & EU harmonized 854-862 & 863- 865 MHz	Optimized: TV Ch. 67-69 & EU harmonized 838-862 & 863-865 MHz	U.K. preferred: "Ch. 69 Co-ordinate frequencies SET 1"	U.K. preferred: "Ch. 69 Co-ordinate frequencies SET 2"	U.K. preferred: "Ch. 69 Co- ordinated frequencies INDOORS"	U.K. preferred: "Ch. 69 Co-ordinated frequencies OUTDOORS"	U.K. pre- ferred: "Ch. 69 Shared frequen- cies" (option 1)	U.K. pre- ferred: "Ch. 69 Shared frequencies" (option 2)	EU harmonized band: opti- mized for 863 - 865 MHz	Combined UHF-R Q5 and R9: max. # of compatible (option 1)	Combined UHF-R Q5 and R9: max. # of compatible (option 2)
	Group 33	Group 34	Group 35	Group 36	Group 37	Group 38	Group 39	Group 40	Group 41	Group 42	Group 43
1	854.225	838.650	855.675	856.500	854.500	854.375	854.900	855.275	863.125	791.925	796.050
2	855.525	840.225	856.375	857.500	855.000	854.850	855.900	855.900	863.525	793.425	796.900
3	855.925	841.325	856.800	858.250	855.900	855.725	856.575	857.950	864.175	796.250	798.025
4	856.550	843.700	857.425	858.700	856.600	856.400	857.950	858.650	864.625	802.725	803.000
5	857.950	845.000	860.600	859.525	857.100	856.850	858.650	860.400		808.450	806.700
6	859.550	850.675			857.850	857.625	860.400	860.900		809.450	811.825
7	860.725	852.675			858.900	858.625	861.200	861.750		811.450	812.250
8	861.450	853.250			859.500	859.950	861.750			823.200	815.125
9	864.050	855.150			860.475	860.650				824.350	828.625
10	864.550	856.050			860.925	861.075				826.800	829.500
11	854.750	859.225			861.700	861.900				828.075	836.825
12		860.625								830.800	838.400
13		863.600								837.000	840.425
14		864.400								839.275	846.975
15		864.800								840.850	847.525
16		838.250								850.675	848.725
17		839.625								851.175	851.800
18		843.275								852.850	853.925
19		847.500								854.250	857.425
20		854.475								857.125	861.125
21		857.325								864.475	863.475
22										831.375	803.525
23										852.175	825.125
24										858.975	830.800
25										863.300	853.250
26										805.700	863.900
27										834.350	823.975
28										835.175	831.900
29										835.575	839.300
30										848.800	860.075
31										861.825	864.550
32										791.075	791.525
33										794.225	817.550
34										823.925	825.775
35										848.300	832.425
36										861.025	855.125

## A24 FREQUENCY BAND (779-787 / 797-806)

Channel	L1	L2	L3	L4	L5	L6	L7	L8
A1	779.125	779.250	779.625	779.750	780.625	780.250	779.125	782.875
A2	779.375	779.500	779.875	780.500	781.125		779.375	783.000
A3	780.125	780.000	780.375	781.000	781.375		779.875	783.125
A4	780.750	780.875	781.250	782.125	781.750		780.500	783.250
A5	782.000	781.500	781.625	782.375	782.625		781.500	783.375
A6	782.500	781.875	782.250	782.750			782.375	783.500
A7							782.750	
1	797.125	797.250	797.625	797.750	798.625	798.250	797.125	800.875
2	797.375	797.500	797.875	798.500	799.125		797.375	801.000
3	798.125	798.000	798.375	799.000	799.375		797.875	801.125
4	798.750	798.875	799.250	800.125	799.750		798.500	801.250
5	800.000	799.500	799.625	800.375	800.625		799.500	801.375
6	800.500	799.875	800.250	800.750			800.375	801.500
7							800.750	

Channel	H1	H2	H3	H4	H5	H6	H7	H8
A1	783.625	783.750	784.125	784.250	785.125	784.750	783.625	787.375
A2	783.875	784.000	784.375	785.000	785.625		783.875	787.500
A3	784.625	784.500	784.875	785.500	785.875		784.375	787.625
A4	785.250	785.375	785.750	786.625	786.250		785.000	787.750
A5	786.500	786.000	786.125	786.875	787.125		786.000	787.875
A6		786.375	786.750	787.250			786.875	
A7							787.250	
1	801.625	801.750	802.125	802.250	803.125	802.750	801.625	805.375
2	801.875	802.000	802.375	803.000	803.625		801.875	805.500
3	802.625	802.500	802.875	803.500	803.875		802.375	805.625
4	803.250	803.375	803.750	804.625	804.250		803.000	805.750
5	804.500	804.000	804.125	804.875	805.125		804.000	805.875
6	805.000	804.375	804.750	805.250			804.875	
7							805.250	

Channel	C1	C2	C3	C4	C5	C6	C7	C8	C9
1	779.125	779.500	779.250	779.500	779.125	779.250	779.250	779.500	779.500
2	779.375	779.875	779.750	780.000	779.375	779.500	780.000	780.750	780.250
3	780.875	782.375	780.500	780.750	780.125	780.000	780.500	781.625	780.750
4	781.875	784.125	782.000	782.250	781.625	781.375	781.500	782.000	781.750
5	783.750	786.500	782.625	784.000	783.625	782.500	781.875	783.625	782.125
6	786.125	787.500	783.750	785.375	784.250	783.375	784.000	784.250	784.250
7	787.250	787.750	785.750	786.000	785.375	784.875	785.625	785.375	785.875
8			786.750	787.000	786.625	786.125	786.750	786.750	787.000
9					787.000	786.500	787.375	787.250	787.625
10					787.500	787.125	787.625	787.500	787.875

Channel	E1	E2	E3	E4	E5	E6	E7	E8	E9
1	797.125	797.500	797.250	797.500	797.125	797.250	797.250	797.250	797.500
2	797.375	797.875	797.750	798.000	797.375	797.500	798.000	798.750	798.250
3	798.875	800.375	798.500	798.750	798.125	798.000	798.500	799.625	798.750
4	799.875	802.125	800.000	800.250	799.625	799.375	799.500	800.000	799.750
5	801.750	804.500	800.625	802.000	801.625	800.500	799.875	801.625	800.125
6	804.125	805.500	801.750	803.375	802.250	801.375	802.000	802.250	802.250
7	805.250	805.750	803.750	804.000	803.375	802.875	803.625	803.375	803.875
8			804.750	805.000	804.625	804.125	804.750	804.750	805.000
9					805.000	804.500	805.375	805.250	805.625
10					805.500	805.125	805.625	805.500	805.875

Channel	F1	F2	F3	F4	F5	F6	F7	F8	F9
1	797.125	797.250	799.000	797.625	797.375	797.125	797.375	797.250	797.125
2	797.875	797.500	800.125	798.000	797.750	797.375	797.625	797.500	797.500
3	798.250	798.750	801.500	799.000	798.875	797.750	798.875	797.875	799.125
4	799.750	799.500	803.500	800.250	801.625	798.750	799.250	799.625	800.125
5	801.875	802.250	804.250	802.000	804.125	799.875	800.250	801.000	802.000
6	802.875	802.750	805.875	803.500		801.375	801.000	802.250	804.250
7	804.250	805.125				803.625	803.000	803.875	804.750
8						804.375	805.250	805.000	805.500
9						804.875		805.875	

## JBX FREQUENCY BAND (806.125 - 809.750 MHz)

Channel	Group 1	Group 2	Group 3	Group 4	Group 5	Group 6	Group 7
1	806.125	806.250	806.625	806.750	807.625	807.250	806.125
2	806.375	806.500	806.875	807.500	808.125		806.375
3	807.125	807.000	807.375	808.000	808.375		806.875
4	807.750	807.875	808.250	809.125	808.750		807.500
5	809.000	808.500	808.625	809.375	809.625		808.500
6	809.500	808.875	809.250	809.750			809.375
7							809.750

Channel	F1	F2	F3	F4	F5	F6	F7	F8	F9
1									
2									
3									
4									
5									
6					806.125				
7			806.375	807.000	806.375				
8	806.250	807.625	808.125	807.250	807.125				
9	806.750	808.750	809.000	807.750	807.750	806.125		808.000	
10	809.500	809.375	809.375	808.875	809.000	806.750	808.500	806.875	808.625
11	809.750	809.750	809.625	809.750	809.500	808.750	809.125	808.375	809.500
12						809.625	809.625	809.125	809.750

## Q6 FREQUENCY BAND (740.125 - 751.875 MHz)

Channel	Group 1	Group 2	Group 3	Group 4	Group 5
1	740.275	740.275	740.250	740.275	740.375
2	741.000	740.825	740.900	740.800	741.275
3	741.450	741.725	741.325	742.550	741.700
4	742.425	742.250	742.075	743.350	743.450
5	742.850	742.975	743.025	743.775	743.925
6	743.600	743.450	743.475	745.525	744.775
7	744.050	744.425	744.525	748.125	746.975
8	745.050	746.825	745.375	748.925	748.700
9	747.450	747.825	747.925	749.350	749.600
10	748.425	748.275	748.375	751.250	750.925
11	748.900	749.025	749.200	751.775	751.650
12	749.625	749.450	749.625		
13	750.150	750.425	750.250		
14	751.050	750.875	751.100		
15	751.600	751.600	751.600		

# FREQUENCY BAND G7C (470.125–509.875 MHz)

Group	1	2	3	4	5	6	7	8	9	10	11	12	13
Channel	Full Range max. # of compatible frequencies (option 1) 470 - 510 MHz	Full Range max. # of compatible frequencies (option 2) 470 - 510 MHz	Compatible with Group 3 of L3E (band completely available)	Compatible with Group 4 of L3E (band completely available)	Compatible with Group 5 of L3E (band completely available)	Compatible with Group 6 of L3E (band completely available)	Compatible with Group 7 of L3E (band completely available)	Compatible with Group 8 of L3E (band completely available)	European TV channel 21 optimized 470 - 478 MHz	European TV channel 22 optimized 478 - 486 MHz	European TV channel 23 optimized 486 - 494 MHz	European TV channel 24 optimized 494 - 502 MHz	European TV channel 25 optimized 502 - 510 MHz
1	470.200	470.250	471.525	470.125	470.200	470.700	470.475	509.450	470.125	478.125	486.125	494.125	502.125
2	470.750	470.700	473.175	471.050	470.550	471.650	471.025	508.900	471.375	479.375	487.375	495.375	503.375
3	471.950	471.325	473.600	472.400	472.025	472.250	471.875	508.050	472.000	480.000	488.000	496.000	504.000
4	472.300	471.675	474.575	473.075	474.600	473.350	473.025	506.900	472.825	480.825	488.825	496.825	504.825
5	475.600	474.150	476.950	474.850	475.600	474.725	475.300	504.625	473.350	481.350	489.350	497.350	505.350
6	476.450	475.450	481.050	475.675	476.325	475.500	476.300	503.625	475.800	483.800	491.800	499.800	507.800
7	478.650	476.325	481.725	477.600	476.800	477.475	478.075	501.850	476.225	484.225	492.225	500.225	508.225
8	487.725	482.975	485.375	483.275	485.975	486.050	481.775	498.150	476.950	484.950	492.950	500.950	508.950
9	488.400	484.600	487.975	488.675	490.125	490.275	485.925	494.000	477.875	485.875	493.875	501.875	509.875
10	491.575	491.150	492.200	489.250	493.875	492.600	486.325	493.600	477.300	485.300	493.300	501.300	509.300
11	492.675	492.325	498.075	492.675	497.000	498.575	492.025	487.900					
12	496.625	498.050	501.000	497.975	502.175	501.950	498.325	481.600					
13	498.475	500.975	504.175	504.675	502.525	502.300	504.275	475.650					
14	501.000	502.900	505.425	505.150	505.125	503.525	505.025	474.900					
15	502.525	504.300	506.300	505.925	506.450	507.575	505.575	474.350					
16	505.825	506.525	507.700	507.600	507.050	508.050	506.675	473.250					
17	506.200	507.025	508.750	507.950	508.700	509.025	507.600	472.325					
18	507.125	508.325	509.325	509.800	509.150	509.800	509.450	470.475					
19	508.875	509.050	470.650	473.450	509.850	470.325	472.325	508.750					
20	475.200	477.825	476.375	479.175	477.475	476.975	497.125	483.950					
21	503.875	478.750	483.925	495.900	479.525	481.150	500.050	481.025					
22	509.600	505.300	499.800	509.100	481.300	501.375	502.700	478.375					
23	473.475	509.375	503.550	470.700	489.275	504.375	508.750	472.325					
24	477.900	475.775											
25	479.075	485.650											
26	479.925	486.400											
27	490.300	487.550											
28	493.600	488.900											
29	494.200	489.250											
30	495.250	491.600											
31	497.200	496.175											
32	507.450	501.850											

## Q10A FREQUENCY BAND (740.125–786.875 MHz)

Channel	Group 1	Group 2	Group 3	Group 4	Group 5	Group 6	Group 7	Group 8	Group 9	Group 10	Group 11	Group 12
1	740.450	740.600	740.550		741.350	740.550	740.300		741.075	740.200	740.175	740.300
2	741.425	742.500	740.975	740.500	742.150	744.350	741.400	740.625	743.000	740.825	740.875	741.000
3	743.075	743.000	742.750	742.025	745.725	744.975	741.925	742.450	743.600	742.650	741.875	742.000
4	745.350	744.050	747.875	747.550	747.000	745.800	742.825	742.975	745.225	743.175	744.750	744.875
5	746.050	744.700	748.750	748.800	748.050	749.100	745.800	743.800	749.100	744.000	745.900	746.025
6	747.350	746.700	753.225	749.650	749.525	755.175	747.950	746.625	756.175	746.825	746.775	746.900
7	748.150	749.000	754.225	753.650	750.700	756.250	749.475	748.825	759.850	749.025	748.375	748.500
8	751.875	752.125	755.550	756.800	753.550	756.725	752.575	749.225	761.000	749.425	750.275	750.400
9	753.625	754.650	756.325	760.550	755.325	758.725	755.925	755.750	762.800	755.950	752.850	752.975
10	756.050	756.100	758.200	761.500	756.700	759.450	756.550	759.075	763.825	759.275	759.150	759.275
11	757.150	757.900	758.825	762.200	758.300	761.650	758.325	761.025	767.325	761.225	761.900	762.025
12	763.525	760.925	762.550	763.350	758.700	766.225	761.525	769.125	768.175	769.325	771.700	771.825
13	764.950	768.675	767.425	765.850	768.800	771.450	766.775	769.725	768.775	769.925	773.125	773.250
14	749.725	741.700	741.750	767.850	745.000	741.675	746.625	770.575	776.875	770.775	777.125	777.250
15	752.350	746.150	743.475	741.150	751.425	753.425	747.150	774.075	778.825	774.275	778.875	779.000
16	754.650	747.950	746.650	744.200	757.375	754.425	750.750	775.100	782.150	775.300	780.425	780.550
17	756.750	756.850	751.350	746.100	759.650	760.425	753.775	776.900		777.100	781.725	781.850
18	761.400	758.700	751.925	752.525	760.325	772.225	757.775	778.050		778.250	782.325	782.450
19	762.675	759.250	753.625	754.400	764.400		759.825	781.725		781.925	784.850	784.975
20		761.975			755.775	779.675		776.575			785.350	785.475
21					766.975			779.600			786.500	786.625
22					784.550							
23												
24												
25								747.325	740.575	747.525		
26								750.000	754.950	750.200		
27								782.950		783.150		
28												
29								763.450	745.850	763.650		
30								763.925	754.200	764.125		
31								764.650	772.325	764.850		
32								765.575	773.250	765.775		
33								783.700	773.975	783.900		
34									774.450			
35								741.675	747.900	741.875		
36								761.750	751.825	761.950		
37								786.075	776.150	786.275		
38												
39								741.275	748.275	780.925		
40								747.825	781.200	785.200		
41								780.700	782.450			
42								784.975	782.925			
43									783.875			
44									785.800			
45									786.775			

## R16, R18 FREQUENCY BANDS

TRANSMITTER POWER								
R16	10 mW				50 mW			
R18	10 mW							
Channel	Group 1	Group 2	Group 3	Group 4	GROUP 5	GROUP 6	GROUP 7	GROUP 8
1	794.300	794.125	794.250	794.425	794.325	794.200	794.350	794.475
2	794.600	794.425	794.625	794.800	794.725	794.600	795.925	796.050
3	795.250	795.075	795.750	795.925	795.525	795.400	796.775	796.900
4	795.725	795.550	797.425	797.600	796.050	795.925	798.225	798.350
5	796.400	796.225	798.325	798.500	796.925	796.800	801.025	801.150
6	797.350	797.175	801.800	801.975	797.550	797.425	801.750	801.875
7	797.850	797.675	802.600	802.775	797.975	797.850	803.075	803.200
8	798.750	798.575	803.425	803.600	798.575	798.450	803.575	803.700
9	800.800	800.625	803.825	804.000	801.875	801.750	804.775	804.900
10	801.975	801.800	805.600	805.775	802.650	802.525	805.750	805.875
11	802.475	802.300			803.100	802.975		
12	803.400	803.225			803.750	803.625		
13	803.925	803.750			804.100	803.975		
14	804.625	804.450			804.650	804.525		
15	805.025	804.850			805.375	805.250		
16	805.600	805.425						

## FCC DECLARATION OF CONFORMITY

We,  
of  
Shure Incorporated  
5800 W. Touhy Avenue  
Niles, IL 60714-4608, U.S.A.  
(847) 600-2000

Declare under our sole responsibility that the following product

Model: UR4S and UR4D Description: UHF Receivers

Has been tested and found to comply with the limits for an unintentional radiator device, and approved under the Declaration of Conformity provision of the Part 15 of the FCC rules.

Operation is subject to the following two conditions:

1. This device may not cause harmful interference.
2. This device must accept any interference received, including interference that may cause undesired operation.

Signed

Date January 6 2005



Name, Title Craig Kozokar  
EMC Project Engineer, Corporate Quality, Shure Incorporated

# SHURE®

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